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Progress in Prostatectomy*

• A scholarly presentation of a subject of interest to the specialist and the general practitioner.

THOMAS E. GIBSON, M. D.†
San Francisco

Introduction

THE care of patients suffering from urinary obstructions caused by prostatic disease has always held an important place amongst the obligations of *general practice*. Today it is becoming a problem of increasing magnitude because of the ever enlarging proportion of our population attaining longevity as a result of the great advances in the last fifty years in all branches of medical science.

It is a remarkable phenomenon that mankind should have remained in *absolute ignorance* for so long regarding a part of the body liable to such important and devastating pathological changes as the prostate gland. *Phylogenetically*, the prostate is a very *old* gland. It developed far back in the process of evolution. Even the lowly earthworm has a well developed prostate gland. Yet, mankind knew nothing of its existence until the 16th century. Then the classic authors described "excresences" and "carnosities" at the bladder outlet, but that was the extent of their knowledge.

On looking at the records it is amazing to find that prostatectomy is an operation of very recent times. It is pretty much a 20th century development.

Etiology

The cause of benign prostatic hypertrophy is not known. However there is abundant evidence that *endocrine* factors play an important etiological role. This theory is supported by the fact that *eunuchs*, castrated before middle life, do *not* develop prostatic enlargements. I do not know if castration would also prevent cancer of the prostate. However, I think it would if done early enough in life. Cancer of the prostate is increasingly prevalent after the age of fifty, so much so that Doctor Hugh Young once remarked that any man who lives long enough will develop the disease. We do know as a result of Huggin's work that the gonads do have a *tremendous endocrine* effect on the evolution of prostatic cancer. Castration *after* middle life does

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† Assistant Clinical Professor of Urology, University of California School of Medicine; Chief, Department of Urology, Southern Pacific Hospital and St. Joseph's Hospital, and Civilian Consultant in Urology, Letterman Army Hospital, San Francisco.

not have any worthwhile effect on benign prostatic hypertrophy but it *does* have a definite retarding effect on prostatic cancer. So much so in fact that a few patients I have followed for fifteen or more years have now no more evidence of cancer. Unfortunately, in the majority of cases the benefit is not permanent.

Symptoms and Diagnosis

A misleading situation arises when we have a patient with silent prostatism. The patient may deny any urinary symptoms and complain only of general lassitude, loss of appetite, weakness, headache, diurnal somnolence and constipation. All experienced urologists are familiar with the old gentleman who, in spite of a chronically overdistended bladder which necessitates the unbuttoning of his top trouser button, complains only of wetting the bed at night. One of my patients complained only of severe headache. A brain surgeon had been called in by his family doctor who thought he might have a brain tumor. Discovery of a tremendously overdistended bladder revealed the true situation. The patient's bladder was drained for several days by indwelling Foley catheter until renal function had become stabilized. (His headache was due to uremia from back pressure on his kidneys). Then a median bar was removed by transurethral resection and the patient made a most gratifying recovery.

In general, the man who has prostatism complains of local symptoms referable to the urinary tract. One of the first and most important symptoms is nocturia. The patient has to get up to urinate one or more times at night. At the same time some impairment of the size and force of the stream is noted. Difficulty in starting and terminal dribbling gradually become more troublesome. Hematuria may occur, but not often. Contrary to general belief, bleeding is more common with benign hypertrophy than with cancer of the prostate. An attack of acute retention may occur, usually at a most inopportune time.

In such cases when the physician feels the prostate rectally and notes enlargement he has little difficulty in advising the patient as to whether or not surgical treatment is indicated. However, it must be remembered that the prostate may not feel enlarged or abnormal in any way. In such cases one should keep in mind the possibility of prostatic obstruction that cannot be palpated rectally, such as a middle lobe hypertrophy, median bar, fibrous contracture of the bladder neck, and neurogenic bladder. Further studies must then be carried out. The presence and amount or the absence of residual urine is of first importance in the diagnosis. This is done by having the patient void all he can, and then passing a catheter to see if any residual urine remains in the bladder. This test, too, can be deceptive, because high degrees of vesical neck obstruction can exist without residual urine, since the bladder muscle undergoes compensatory hypertrophy and can compensate at first for the demands imposed by the obstruction. More definitive studies by the urologist may then be required to reach an accurate evaluation of the particular case.

Recurrent urinary tract infection often constitutes the only subjective finding in prostatism. Recurrent attacks of cystitis with pyuria may constitute a puzzling situation as to etiology until careful study reveals that it is due to bladder neck obstruction caused by the prostate. Obstruction anywhere in the urinary tract predisposes to infection, and the reverse is also true. Stasis of urine incidental to obstruction almost invariably leads to infection sooner or later.

Patients with a moderate degree of obstruction with no evidence of infection or damage to the upper urinary tract through backpressure may be carried along on non-surgical treatment for long periods without surgery in some cases. However, if symptoms become too disturbing, or, regardless of symptoms, if kidney damage becomes evident as a result of the obstruction then surgical treatment is imperative. In prostatism patients do not die as a direct result of the disease of the prostate but indirectly

from uremia as a result of damage to the upper urinary tract. In such cases it is necessary to resort to the indwelling catheter to overcome the effects of the obstruction. Then after several days, or even weeks, when renal function is stabilized and general homeostasis restored, surgery can be employed with some degree of safety. In other patients who show no renal impairment, operation may be undertaken without delay provided their general physical condition permits.

An ancient philosopher by the name of Gracian said: "For it is not without plan that nature has joined the sweetness of the honey with the sharpness of the sting of the bee".

Choice of Technique

So it is with prostatectomy. Of all the many techniques and variations thereof which man has devised there is none with its advantages which has not also its disadvantages. Fancy has run riot in devising new methods of approach. There are those mice among men who choose to nibble at even the largest gland making unseemly hamburger of it (transurethral resection) while the man among the mice with a deft turn of the wrist and flick of the finger removes the whole thing en masse in ten minutes by open operation.

The relative merits and demerits of all these methods has furnished urologists with a never ending source of enjoyable debate and there is no prospect that these views will ever be wholly reconciled anymore than that the United Nations will be able to wipe war from the face of the earth. I *do* think, however, there is a growing tendency for urologists to stop bragging about how big a gland they can remove by transurethral resection, and to veer in the direction of *open* prostatectomy, which is easier on both the surgeon and the patient. Too many patients have come back later for more resection in cases of benign hypertrophy. Transurethral prostatectomy is the hardest operation to learn to do. Someone stated that it takes ten years and 1000 cases to make a good resectionist.

In the marvelous present day training facilities available to the young man who wishes to specialize in urology he may theoretically acquire equal skill and facility in all methods of prostatectomy. I doubt this euphoric thought will ever be realized because of the natural variations in individual human proclivities. Every urologist unconsciously assumes a partisan attitude with experience, and becomes biased in favor of certain methods, and he will become more expert in certain procedures and less so in others. Years of experience with a wealth of clinical material and a conscientious attempt on my own part to become proficient in all methods has failed to make me the perfectly rounded out unbiased expert in all methods which we are told should be the goal of every urologist. Such Olympian heights are only for the chosen few, and mighty few are chosen.

Analyzing my own attainments without personal bias, I would grade myself on a scholarship basis as follows: Suprapubic prostatectomy grade 1, perineal prostatectomy grade 2, transurethral prostatectomy grade 3 and retropubic prostatectomy grade 4. Thus I consider myself an expert suprapubic prostatectomist, a good perineal prostatectomist, a fair resectionist and a mediocre retropubic artist. I find that these grades vary in direct proportion to my personal liking for these various operations. Obviously, any man will learn to do well what he likes to do, and will only achieve mediocrity in what he does not like to do. Recognition of the human equation renders futile all argument as to the superiority of one method over another. With adequate basic training in urology supplemented by years of experience the urologist is entitled to utilize the particular method for a given type of case which he has found gives him the most perfect end results with a minimum of morbidity and mortality.

With this peroration I will now proceed to outline my own methods, and at the same time I shall try to avoid any insinuation that my way is the only way to salvation. In other words, I shall not

attempt to tell you the best way, but the way I like best. I would be in an embarrassing dilemma if I were to convert you all to my way of thinking and then have my convictions altered, as might happen to anyone who retains an open and pliable mind.

In retrospect, it interests me to note that at the outset of my urological career, having been trained by a perineal enthusiast, I did perineal prostatectomies exclusively in the case of median bars, vesical neck contractures and obstructive prostatic cancer not amenable to radical removal. I subsequently learned to do suprapubic prostatectomies which I came to look upon with increasing favor, since it was easier to do than the perineal and less subject to urethral sphincter and rectal injury. With the advent of the Stern-McCarthy Resectoscope, transurethral prostatectomy won the spotlight and became so favored that I treated about ninety per cent of bladder neck obstructions by this method. With increasing experience my initial enthusiasm for transurethral resection waned as a result of certain morbidity factors, and the necessity of reoperation after a few years in a certain percentage of cases, particularly those cases of adenomatous hyperplasia. No matter how emphatic the transurethral protagonists may be who do 100 per cent resections I remain skeptical of the ability of even the most skilful to completely and safely remove 100 per cent of the hyperplastic tissue in every case.

At the present time my practice is to utilize transurethral resection in approximately thirty per cent of all bladder neck obstructions. I limit its use in general to median bars, small hyperplasias, vesical neck contractures, certain neurogenic bladder disturbances and obstructive prostatic cancer not amenable to radical extirpation. Approximately 60 per cent are done suprapubically. Suprapubic prostatectomy is limited to benign glandular hyperplasias which by their very nature are easily enucleable. Perineal prostatectomy is resorted to in about ten per cent of cases. The indications for this procedure are benign hyperplasias of extravesical type which are low in the pelvis, prostatic enlargements in the very obese, and in suspected prostatic cancer. The perineal approach is ideal also for extensive calculus disease of the prostate where operative interference is indicated.

Retropubic prostatectomy has not yet won a place in my affections. So far, I fail to see where it has any special virtues to recommend it over and above those methods already in use. It violates the space of Retzius which it can only do because of antibiotics and allied drugs, but even then, the incidence of osteitis pubis is greater with it than with other operations. However, many urologists have given this operation their stamp of approval, and it is not my purpose to make odious comparisons. I do not propose to bore you with statistics because biological statistics are always elastic enough to support any partisan thesis. How measure the length of an earthworm which can vary its length according to the exigencies in which it finds itself?

In 1949, I had the privilege of attending the Eighth Congress of the International Society of Urology held in Barcelona, Spain. One day was devoted to a symposium on the treatment of the obstructions of the bladder neck (excluding cancer of the prostate). I was particularly interested in a comprehensive dissertation given by Galbraith of Glasgow, Scotland. After paying tribute to some of the newer procedures such as the Harris operation, the Hey operation and the Millin operation he mentioned the original operation by Freyer of London first done over fifty years ago. I quote: "By this operation I mean a simple rapid suprapubic enucleation of the prostate gland (with control of bleeding by the use of a dilatable bag catheter). I believe that this may be the operation of choice in the *very poor risk* (italics mine), where it would be unsafe to submit that patient to an operation exceeding a quarter of an hour in length". In that statement I believe he unwittingly revealed the crux of the whole situation.

My immediate thought was that if the Freyer operation is best for the very poor risk why is it not also good for the risk that is not so poor? Probably this feeling has been the subconscious motivation for my favoring the Freyer operation, with slight modification, for the past twenty-five years, and finding it good. Incidentally, I would invite you to read Freyer's book on "Enlargement of the Prostate", published over half a century ago. You will find it extremely interesting and instructive. He claims priority in having, on December 1, 1900, performed the first *total* enucleation of the prostate gland as opposed to the earlier operations of McGill, Belfield, Fuller and others who pioneered in doing partial prostatectomies, removing only prominent portions of the enlarged gland "by means of scissors, forceps and scoops of kinds". He does not mention the perineal prostatectomy of Goodfellow who is generally accorded priority in removing the total enlargement some ten years earlier.

Regardless of priority, it is a remarkable tribute to Freyer and his work that he was able in 1906 in the third edition of his book to report a series of 312 cases operated upon with a mortality of only seven per cent. Mind you, this was in the days before we had blood transfusions, antibiotics, modern anesthesia, and very little knowledge of blood chemistry or kidney function.

Technique of Suprapubic Prostatectomy

Preliminary vasectomy is routinely performed in open prostatectomy to prevent postoperative epididymitis. A small incision 6 cm. in length is made in the midline above the symphysis pubis extending down through the rectus fascia. The rectus muscles are separated in the midline exposing the prevesical space. The prevesical fascia is pushed upward to avoid possible injury to the peritoneum and the anterior bladder wall grasped with an Allis clamp. The bladder is anchored on each side of the Allis clamp with a guy suture and the clamp removed. A scalpel is plunged into the bladder at this point and the opening made only large enough to admit the index finger. Like the female perineum, this opening will stretch sufficiently to permit the enucleation of the gland as well as its removal to the outside. This stretching maneuver is preferable to incising the bladder wall any more than is absolutely necessary, because a small incision facilitates primary healing and greatly minimizes postoperative hospitalization. Here I quote Freyer who states that, "It is astonishing through what a comparatively small suprapubic wound a very large prostate can be delivered".

The enucleation of the prostate is accomplished by pushing the index finger down into the prostatic urethra anterior to the catheter, breaking through the mucous membrane of the urethra overlying the lobes and sweeping the finger laterally to right and left, gently and carefully following the plane of cleavage established between gland and capsule. Special care is taken in freeing the gland at its apex so as not to damage the external sphincter. In the majority of cases, bimanual enucleation, performed by having the index finger of the other hand in the rectum to elevate the prostate, will greatly facilitate the operation.

There is generally very little bleeding from the operation. In rare cases where one encounters an unexpectedly adherent gland it may be necessary to enlarge the wound sufficiently to aid the enucleation with scissors. Quoting Freyer again, "It is astonishing the rapidity with which the cavity left by the removal of the prostate practically disappears, owing to the inherent elasticity of the sheath, the contractility of the surrounding muscles, and the pressure of the pelvic structures generally. *The contraction that takes place somewhat resembles that of the womb in parturition, and no doubt has a similar influence in arresting hemorrhage*". Freyer concluded his operation simply by inserting a large suprapubic tube in the bladder and made no use of packs, bags or urethral retention catheter. In conformance with his practice I long ago con-

signed packs and hemostatic bags to the ashcan and instead use a 24 F Foley retention catheter with 30 cc. bag per urethram, together with a large caliber suprapubic tube. I believe that blood loss is in general less with this technic. Less than ten per cent of cases require a unit of blood postoperatively.

Wound closure consists simply of taking two sutures of chromic No. 1 to approximate the rectus fascia, and two sutures of Dermalon in the skin. The opening in the bladder, because of its small size is not sutured. The entire operation from incision to closure, because of its ease and simplicity should not require more than fifteen to thirty minutes for its execution. This is important in old people in avoiding shock.

Postoperatively, the suprapubic drainage tube is removed in twenty-four hours. The urethral Foley 24 F catheter is left in place, and, if kept properly adjusted and open, wound healing is *per primam* without any urinary leakage above. The patient leaves his bed on the second day postoperative and the retention catheter is removed on the sixth or seventh day. It is rarely necessary to replace the catheter. These patients are often clamoring to go home by the eighth or ninth day, but we insist on their staying in the hospital ten to fourteen days, where there is less danger than at home of late secondary reactions or complications.

I am happy with this operation because it is quick and easy to do, and patients are happy because the results are uniformly good.

So much has been written in the last few years about transurethral and retropubic prostatectomy as well as complicated ways of doing suprapubic prostatectomy, that we are apt to think of the original Freyer operation as obsolete. If any of the younger men in this assembly are imbued with such ideas, let them reconsider, and go back to fundamentals.

Perineal Prostatectomy

Because of my early training in urology I have never completely abandoned perineal prostatectomy but still resort to it for teaching purposes, for occasional cases of calculus disease of the prostate, and for carcinoma or suspected carcinoma when it appears to be early enough to benefit by radical removal of the gland.

In 1950, Smith and Woodruff published a thought provoking paper on the development of cancer of the prostate after subtotal prostatectomy for benign, or supposedly benign, hypertrophy. They reported a series of 648 cases of cancer of the prostate in which six per cent had previously undergone subtotal prostatectomy for what appeared to be benign hypertrophy. Further study showed an even higher percentage of clinically undetected carcinoma in specimens removed. They therefore advocate total prostectomy in selected cases of benign hypertrophy.

Labess (1952) in a study of 98 prostates removed suprapubically, clinically diagnosed benign, 9.2 per cent showed coexisting carcinoma. For the past few years there has been an increasing trend in my own practice when doing perineal prostatectomy to do a *total* rather than *subtotal* removal of the gland for two reasons: first of all it is easier to do and secondly it definitely removes any latent malignancy as well as preventing the occurrence of future malignancy. The seminal vesicles are not removed unless carcinoma has been proved clinically or by frozen section from the prostate at the time of operation. It may surprise some of you to know that it is easier to do a *total* than a *subtotal* perineal prostatectomy, so even in cases of benign hypertrophy subjected to perineal prostatectomy I now routinely perform a total rather than subtotal enucleation unless there is some specific contraindication, such as the preservation of the sexual function. Sex life is still an important consideration to some individuals who are still not too old to *yearn*. Speaking of the sexual function, I am always reminded of a passage from Montaigne, the sixteenth century French philosopher, who said: "One has reason to remark on the unruly liberty of this member (the penis)

that so importunately asserts itself when we have no need of it, and so inopportunely fails us when we have most need of it, so imperiously contesting in authority with our will, so proudly and obstinately refusing our solicitations, both mental and manual".

Statistical Study

I would like to mention briefly a statistical study we conducted recently on my service at the Southern Pacific Hospital in San Francisco. This is purely a railroad hospital. In a ten year period, (1947-1957), there were 2000 prostatectomies. There were 1327 transurethral prostatectomies and the balance were open operations chiefly suprapubic by my (Freyer) method. The mortality rate for transurethrals was 1.88 per cent, for suprapubics 1.62 per cent. I think this is a pretty good record when you stop to think that about one half of these cases were done by our residents in training, and that these patients were *all* on *general duty* nursing without special care.

Conclusion

In closing, I would like to say a word about cancer of the prostate. The attitudes of urologists toward radical prostatectomy are at wide variance. These attitudes may be divided into four groups:

1. Those who *believe* in radical prostatectomy, and do it.
2. Those who *do not* believe in radical prostatectomy, and *do it.*
3. Those who *do not* believe in radical prostatectomy and *do not do it.*
4. Those who do not believe in radical prostatectomy, but *say* they do.

Carcinoma of the prostate is such an insidious disease that fewer than five per cent of cases are first seen in a stage early enough to be cured by radical prostatectomy. The radical operation carries a mortality and morbidity rate of five per cent or more. The results of radical surgery as compared with orchiectomy and estrogen therapy in this select group are so closely parallel that the urologist could hardly be accused of malpractice if he were to abandon the radical operation entirely.

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Drug Industry Threatened

I am convinced, in essence, that there should be no change in any laws which throttle the development and marketing of valuable new drugs or would curtail the economic incentives that spur our progress. Unless such stifling proposals are intelligently and vigorously opposed and defeated, the drug industry, as it exists today, will vanish as a free and private industry.—Elmer B. Vliet, Chairman of the Board, Abbott Laboratories, to American Society of Oral Surgeons.

The Use of Gamma Globulin in the Treatment of Herpes Zoster and Herpes Simplex*

• In the treatment of herpes zoster ophthalmicus, the use of gamma globulin is the treatment of choice. In herpes simplex and dendritic ulcers of the cornea, gamma globulin may be reserved for the infants and small children without the antibodies in their plasma.

LOUIS ANDREW BREFFEILH, M. D.†
Shreveport

IN discussing my paper on the "Use of Gamma Globulin in the Treatment of Viral Diseases",[1] I was surprised to learn that this method of therapy was not well known. I feel that every physician who treats viral diseases should be aware of the therapeutic value of gamma globulin. This paper will be limited to its use in herpes zoster and herpes simplex, but its use in other viral diseases must not be forgotten.

Viral diseases unlike bacterial diseases do not have any specific therapy. This has resulted in an inability to eradicate or attenuate these diseases. Once the infection has manifested itself, it must continue its clinical course.

We are fortunate in having vaccines for many of the viral diseases. The best known are those for variola and poliomyelitis. These vaccines if given in sufficient time will develop immune bodies which will attenuate or protect against the disease. Unfortunately, the viral diseases which affect the eyes do not have specific vaccines available.

Once the disease has manifested itself clinically, we have no specific antiviral therapy other than immune bodies obtained from the plasma of a patient who has recently recovered from the disease. The availability of such a person makes it almost impossible to administer the antibodies early in the disease. To be effective the immune bodies must be administered early before the virus has entrenched itself within the cells. We must resort to those commercial preparations which are readily available such as pooled gamma globulin.

Concentrated gamma globulin is derived from plasma pools of normal healthy donors. Its antibiotic titer is adequate to prevent or attenuate measles;[2-5] German measles;[6, 7] infectious hepatitis[8-10] and poliomyelitis.[11, 12] Hyperimmune gamma globulin is derived from the pooled plasma of individuals four to eight weeks after specific immunization or at a comparable time during convalescence from a particular infection. It has been found useful in the prevention of mumps orchitis[13, 14] and pertussis.[15]

There are several advantages in the use of pooled gamma globulin over the parent plasma. The concentration of the gamma globulin is approximately twenty-five times their plasma concentration. The effective dosage may be administered intramuscularly, and the antibodies are sufficiently stable to permit storage until needed. The danger of transmitting serum hepatitis is eliminated.[16]

Poliomyelitis immune globulin (human) was used in the treatment of my patients. This is the same as the immune serum globulin U. S. P. (human) except that it has been specifically demonstrated to meet a standard set by the National Institute

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† Clinical Assistant Professor of Ophthalmology, Division of Post Graduate School of Medicine of Louisiana State University Medical School at Confederate Memorial Hospital in Shreveport, Louisiana.

of Health for content of type 2 (Lansing) poliomyelitis antibody.[17] It is a sterile concentrated solution of globulins obtained from the human blood and processed from human placentae and standardized to contain 16.5 per cent of globulins (plus or minus 1.5 per cent) more than 90 per cent of which is gamma globulin. The antibiotic activity of plasma is largely confined to the gamma globulin faction.

Concentrated gamma globulin is given intramuscularly or subcutaneously but never intravenously. Toxic reactions are uncommon. A local inflammatory reaction at the site of the injection, malaise, headache and a low grade fever may occur. Severe reactions of angioneurotic edema, nephrotic syndrome and anaphylactic shock have been reported.[18]

The dosage of concentrated gamma globulin used for treatment varies from 0.14 cc. to 0.2 cc. per pound of body weight. The smaller figure was found by Harmon to be effective as used in the 1952 poliomyelitis field trials.[19] The larger dose was recommended by the Executive Committee of the Association of State and Territorial Health Officers.[20] The average adult received a dose of 15 to 30 cc. depending upon the severity of the disease. The expense of the treatment is compensated by quicker recovery, shorter hospitalization and minimal loss of time from work.

Herpes Zoster

The beneficial results obtained by the use of gamma globulin in the treatment of herpes zoster was first reported by Gros in 1952.[21] He presented 11 patients of whom 7 had ocular involvement. The relief of pain, retardation of the lesions and hastened convalescence were also reported by Weintraub,[22] Rodarte and Williams [15] and Lea and Taylor.[23] Unfavorable results were reported by Epstein and Allington.[24]

Case Reports

My first experience with the use of gamma globulin in the treatment of herpes zoster occurred in 1951. At this time I was serving as civilian consulting ophthalmologist for the Barksdale Air Force Base Hospital. I had been called to examine a 28 year old pilot who was suffering severely from acute herpes zoster ophthalmicus. He was awaiting air evacuation to an ophthalmological center. ,He was given 20 cc. of gamma globulin in two 10 cc. doses. Over night the pain was relieved and the progress of the skin lesions was retarded. He returned to Barksdale in one week with a request from the ophthalmologist to send the name of the medication administered. His recovery was uneventful.

The use of gamma globulin was limited to the treatment of poliomyelitis and a few other diseases.[25] I was unable to obtain the gamma globulin for further study in the treatment of viral diseases until the Salk vaccine for poliomyelitis was released.

My next patient with herpes zoster ophthalmicus was a 42 year old pharmaceutical salesman who had had the disease for four days. He had been treated with combiotic, ACTH, and piromen with no improvement. He was hospitalized and given 20 cc. of gamma globulin in 10 cc. doses intramuscularly. The pain was relieved in twelve hours and the progression of the skin lesion halted. He was discharged on the sixth day and made an uneventful recovery.

The third patient was a 74 year old white male with his only aphakic eye involved. He was in congestive heart failure with fibrosis and bronchopneumonia of the lung. He was given 30 cc. of gamma globulin in 5 cc. doses intramuscularly. He was also digitalized and given antibiotic medication. The pain was relieved over night and the skin lesion began to improve in forty-eight hours. He was released on his tenth hospital day. He was able to wear his cataract lens, and he made an uneventful recovery.

The fourth patient was a 66 year old white female who had the disease for two days. She was referred by her family physician with herpes zoster of the right eye and right side of the forehead. The patient was admitted to the hospital and given 20 cc. of gamma globulin in two 10 cc. doses. The pain was relieved over night and she was discharged on her fifth hospital day. She made an uneventful recovery and the skin lesion healed without visible scars.

Herpes Simplex

The therapeutic results obtained with systemic administration of gamma globulin vary a great deal. The physicians who have used this method of treatment feel that the best clinical results are obtained in recurrent cases in which there is corneal vascularity. The work of Howard and Allen indicates that the human gam-

ma globulin is effective in herpes simplex infection in experimental animals.[25] I would not hesitate to use the gamma globulin in babies and young children who have not had sufficient time to develop their own antibodies. In these patients dendritic ulcers are severe and resistant to the usual treatment measures. Scars of the cornea are often seen after such an infection. In older patients with recurrent attacks, the gamma globulin should be administered as the healing process is hastened. Hospitalization is usually avoided and the loss of time from work is minimized. The resultant scarring is lessened. Since the scars from previous attacks have lowered their visual acuity, further corneal scars must be avoided whenever possible.

Case Reports

My first experience with the use of gamma globulin in the treatment of dendritic ulcers was in 1952. The patient was an eight month old infant with binocular corneal involvement. The lesions failed to respond to iodine and alcohol cauterization. The diseased epithelium was removed with a Von Graefe knife, and five cc. of gamma globulin administered intramuscularly. The ulcers of both corneas healed with no resultant scars.

The second patient was a five year old white female who was referred by an ophthalmologist who had treated the dendritic ulcer with iodine and alcohol cauterization. The lesion promptly recurred and was spreading. The cornea was again cauterized by iodine and alcohol and the involved epithelium removed with a Von Graefe knife. Ten cc. of gamma globulin in 5 cc. doses were given intramuscularly. The ulcer healed with a minimal scar.

The second group of patients with dendritic ulcers who should be treated with gamma globulin are those with recurrent scarred and vascularized corneas. These patients well remember their periods of hospitalization, repeated cauterization, and often artificial fever injections. They also remember the cost and the time lost from their employment. They are very grateful and cooperative patients.

My first patient in this group was a 28 year old man with numerous corneal scars and vascularity. He was treated in the office by cauterization with iodine and alcohol, and the damaged and diseased corneal epithelium was removed. Atropine and antibiotic ophthalmic ointment were instilled and the eye dressed. Fifteen cc. of gamma globulin were given intramuscularly. Still wearing the eye patch, he was able to return to work on the fourth day. The cornea healed rapidly with only minimal scarring.

The second patient with recurrent dendritic ulceration was a 46 year old school teacher who had scars and vascularization of both eyes. Since his lesion was monocular, he was treated in the office by cauterization with iodine and alcohol. The involved corneal epithelium was removed with the Von Graefe knife. Atropine and antibiotic ophthalmic ointments were instilled and the eye dressed. He was given 20 cc. of gamma globulin in 10 cc. doses on successive days. Wearing the bandage, he was able to return to his classroom on the second day. The cornea healed with minimum discomfort and scarring.

The majority of patients with dendritic ulcers which are primary lesions of small size should be treated by cauterization with iodine and alcohol and with the removal of the involved epithelium. Bandaging of the eye after instillation of atropine and antibiotic ophthalmic ointments in the conjunctival sac is usually sufficient to cure the disease. In recurrent lesions and in those patients with severe clinical reactions of the cornea and conjunctiva, gamma globulin should be given.

Summary

Gamma globulin has been used successfully in the treatment of many of the viral diseases. I have used it successfully in the treatment of herpes zoster and dendritic ulcers. Other authors have reported similar results and have been encouraged with its use.

Conclusions

Many medical articles have been published on the use of gamma globulin in the treatment and prevention of the viral diseases. Very few of these articles include ocular involvement and very little has been published by the ophthalmologists. It has been my experience that very few ophthalmologists are aware of the value of gamma globulin in the treatment of viral diseases.

In the treatment of herpes zoster ophthalmicus the use of gamma globulin is the treatment of choice. In herpes simplex and dendritic ulcers of the cornea gamma

globulin may be reserved for the infants and small children without the antibodies in their plasma. The patients with recurrent attacks and corneal vascularity should be given gamma globulin.

In order to obtain the maximum beneficial results, the gamma globulin must be administered early in the disease. The dosage should also be sufficient to maintain a high plasma titer and thus obtain the maximum clinical response.

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Discussion

Dr. Robert A. Schimek (New Orleans): It is always a pleasure to discuss a paper which is in agreement with one's own views and practices. Dr. Breffeilh should be complimented for his courage in publishing his conviction that gamma globulin is of value in the treatment of herpes zoster and herpes simplex of the cornea.

Let us attempt to judge scientifically the value of gamma globulin for herpes. Against it is the absence of valid statistical data in patients to prove that gamma globulin is truly of value. The course of herpes zoster, and particularly of herpes simplex of the cornea, can be most variable. For example, herpes simplex may occur and subside spontaneously in a few days without any therapy. Certainly, no scientific conclusion can be reached from the treatment of only 4 cases of herpetic dendritic keratitis.

If we take the opposite side and argue for the treatment of herpes with gamma globulin, we can state the following. Although the 4 cases of herpes simplex and 4 of herpes zoster are not as many as would be desired for a statistical evaluation, and although there are no controls, the clinical course of these 8 patients was much better than would be expected with other conventional methods of treatment. Recovery was rapid and uncomplicated. Second, the rationale of applying this treatment for herpes is logical, since gamma globulin has proved to be effective in other virus diseases.

In support of Dr. Breffeilh's observations, I would like to mention 5 cases of my own in which treatment with gamma globulin for herpes simplex of the cornea or dendritic keratitis was used. Case No. 1 was a 20-year old white girl with a history of repeated severe attacks of dendritic keratitis for seven years, which had resulted in a vascularized scarred cornea. I first saw her one month after another recurrence,

which had been treated unsuccessfully elsewhere with iodine cauterization. For the next month I treated her with two additional iodine cauterizations, prolonged patching of the eye, local application of aureomycin, and general hygienic and supportive measures, with her vision remaining about 20/400. Active, severe, widespread dendritic keratitis persisted.. Twenty cubic centimeters of gamma globulin was administered, and the cornea was again cauterized to remove the cells that were already infected. In five days the cornea completely healed and vision cleared to about 20/40.

Case No. 2 was a 10-year old girl, who had had repeated, recurrent attacks of herpetic keratitis accompanied by fever and fever blisters on the face for three years. Some scarring and vascularization of the cornea not affecting the pupillary area were noted. Ten cubic centimeters of gamma globulin was administered. The cornea was cauterized. Uneventful healing occurred within ten days which was a shorter time of recovery than she usually had experienced in the past several years from these attacks. This was about two years ago. One year ago, another attack of herpetic dendritic keratitis occurred, and the cornea was cauterized with iodine. Gamma globulin was again administered, with prompt healing in three days. Since then, whenever herpetic blisters on her face and fever develop, she promptly reports to the office for a prophylactic dose of 2 to 5 cc. of gamma globulin. She has had three such attacks of fever and fever blisters, which have been immediately treated with gamma globulin and no herpetic disease of the cornea has resulted. This has been a reversal of her previous experience when herpetic keratitis would routinely accompany her attacks of fever and "fever blisters" on the face.

Case No. 3 was an adult whose initial attack of herpetic keratitis was treated with 20 cc. of gamma globulin and ether scrub of the cornea, which cleared in three days. Case No. 4 was another adult with his third attack of herpetic keratitis. There was no vascularization of the cornea but there were some scars from the previous attacks. The corneal infection subsided within five days after administration of gamma globulin and iodine cauterization.

Case No. 5 was a 30-year old man with 20/200 vision and dense corneal scarring and corneal vascularization from repeated attacks of herpetic keratitis. Treatment with 10 cc. of gamma globulin and trypsin topically failed to affect the herpetic keratitis. Cauterization of the cornea with iodine resulted in prompt healing within the next three days. It may be that cells that are already infected must be removed by iodine cauterization or other debridement and that gamma globulin may protect the new epithelial cells from infection by the virus. This theory would seem more reasonable in those corneas which are already vascularized so that the antibodies could reach the diseased area.

Although I have made gamma globulin a part of my armamentarium against recurrent herpetic keratitis during the past two and a half years, I have no scientific proof of its value from the standpoint of a controlled statistical series. It is merely a clinical impression that gamma globulin is of value when given before or at the same time of corneal debridement with iodine, ether, or other similar techniques. I hope that Dr. Breffeilh or someone will set up a controlled study so that we can obtain objective evidence of its value.

Drug Information—Please

The nation's physicians annually make 62,000,000 phone calls to the nation's pharmacists—seeking information. It shows that the doctor is avid for information about prescription drugs. It shows also that he will not hesitate to turn to the pharmacist for it.—Dan Rennick, editor of *American Druggist*.

Surgical Treatment for Deafness*

• The technique and results in stapedectomy are given.

HARRY ZOLLER, M. D.†
New Orleans

HEARING loss is the greatest impairment that affects man. There are more than seventeen million Americans including 10 per cent of the school children that suffer from a hearing handicap. At the present time our efforts are directed to the prevention and surgical correction of early hearing losses. Conductive or obstructive hearing losses are due to disease or damage to either the ear canal, drum, middle ear, stapes, eustachian tube, nasopharynx, or a combination of these. This group constitutes one-third of all the hearing impairments.

Children often have recurrent abscesses of the ear. Paracentesis and adenoidectomy will prevent these cases from developing a chronic draining ear with progressive damage to the middle ear structures. In adults a sterile accumulation of fluid often follows a cold. If early paracentesis is delayed eventual reorganization takes place in the middle ear with a resultant adhesive otitis media and hearing damage.

Antibiotics will help some of the cases but the ones that persist need further intervention by surgical methods. In the chronic draining ears, simple mastoidectomy and repair of perforated eardrums will eradicate the infection and maintain good hearing.

Otosclerosis

Deafness due to fixation of the stapes was discovered by great otologists as early as 1735. This condition was called otosclerosis and described as a bony overgrowth of spongy pathological bone in the osseous labyrinth. This ankylosis of the stapes prevented its normal vibration to transmission of sound. The greater the fixation of the stapes the more hearing impairment. In 1938, Dr. Julius Lempert devised the one stage fenestration of the lateral semicircular canal for restoration of hearing. This operation by-passed the stapes and oval window so that sound was transmitted directly to the inner ear. In 1952, Rosen, in elevating the eardrum and testing for stapes fixation, accidentally mobilized the stapes. The patients could hear well, but in several months the stapes refixed in 50 per cent of the cases. Michael Portmann of France and John Shea of Memphis in order to avoid re-ankylosis of the stapes recommended removal of the stapes and footplate and replacement of a stapes by a polyethylene tube. As a result ossicular continuity was re-established as well as the normal transmission of sound to the oval window.

Otosclerosis is common in 1 out of 10 people. There are twice as many women affected as men. Clinical otosclerosis manifests itself between the ages of 15 years and 40 years, but does occur in the older age groups. There is a familial tendency in 60 to 70 per cent of the patients. This is the group that wears hearing aids and feels that very little can be done medically. To the contrary, the greatest strides have been made surgically for the rehabilitation of this group. The etiology of otosclerosis has been termed a vascular process by Dorothy Wolff, a localized form of Paget's Disease, a form of osteogenesis imperfecta. Numerous other theories have been given.

Diagnosis of Otosclerosis

1. Clinical otosclerosis is characterized by a history of a progressive hearing loss

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† From the Department of Otolaryngology, Louisiana State University School of Medicine, New Orleans, Louisiana.

in early adult life which may or may not be associated with tinnitus or a familial history of impaired hearing.

2. The presence of a conductive hearing loss is determined by striking a 500 cycles per second tuning fork in front of the ear. When the sound is no longer heard the tip of the tuning fork is placed over the mastoid bone. The sound is still heard and means the patient has good bone conduction and nerve function. An audiometer gives the exact hearing curve in terms of air and bone conduction at the speech frequencies, namely 500, 1000, and 2000 cycles per second.

3. By elimination of other causes of conductive deafness such as a perforated eardrum, blocked eustachian tube, etc. one arrives at the diagnosis of clinical otosclerosis.

Stapedectomy With Vein Graft Procedure

The ear canal and hand are prepared. A 6 mm. vein graft is taken from the dorsum of the hand and placed in Ringer's lactate solution. Using the operating microscope, a triangular incision is made in the posterior auditory canal 8 mm. to 10 mm. from the annulus of the drum. The skin flap and drum are then dissected and folded anteriorly. The incus and stapes as well as its footplate is visible (Fig. 1).

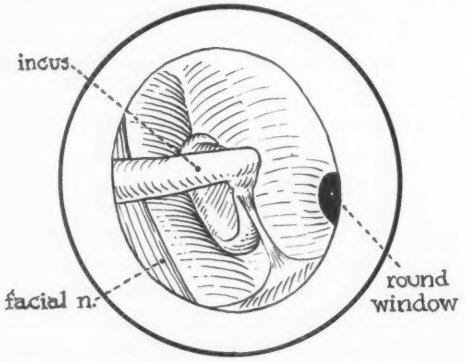

Figure 1.—Exposure of the middle ear showing the incus, stapes and footplate.

The stapedius tendon is divided and the joint between the incus and the stapes is separated. The stapes is fractured and removed.

The stapes footplate is cleared of mucosal covering and then splintered with a small pick (Fig. 2). If the footplate is

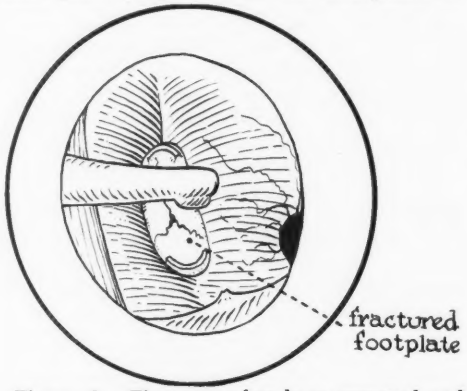

Figure 2.—The stapes has been removed and the thin footplate fractured with a pick.

thick a cutting burr is needed to open the oval window (Fig. 3). The vein is taken

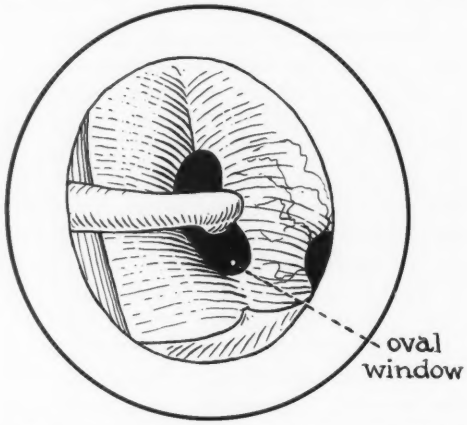

Figure 3.—The oval window after removal of the footplates.

out of the solution, trimmed of fat and divided. The vein with its intima side up is placed over the oval window.

A polyethylene strut 3.5 to 4 mm. is placed between the lenticular process of incus and the oval window covered by the vein graft (Fig. 4).

The eardrum is then replaced and the ear incision covered with gelfoam sponges soaked in adrenalin. The patient now hears better. Testing with the tuning forks will reveal the patient hears better in front of the ear than over the mastoid bone. This means that normal ossicular continuity has been restored.

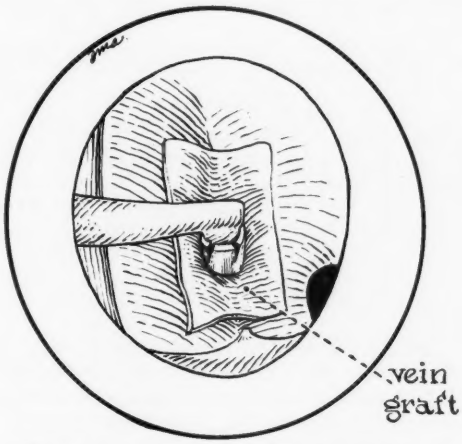

Figure 4.—The vein covers the oval window. The polyethylene strut is placed between the lenticular process of the incus and the oval window.

The hospital period is usually two days and the patient is maintained on antibiotics for a week.

Results and Audiograms

Air-bone gap closures for the 500, 1000, and 2000 cycles per second constitutes a good measure of success (Figs. 5-9).

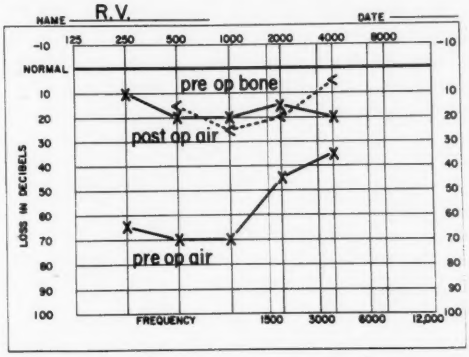

Figure 5.—Overclosure of air-bone gap. (R.V.)

This closure represents a difference of ten decibels between the preoperative bone and the postoperative air conduction in the speed frequencies. Many of our cases showed overclosure of the air-bone gap. The results with this procedure are over 90 per cent and the more selective we are the higher our prognosis.

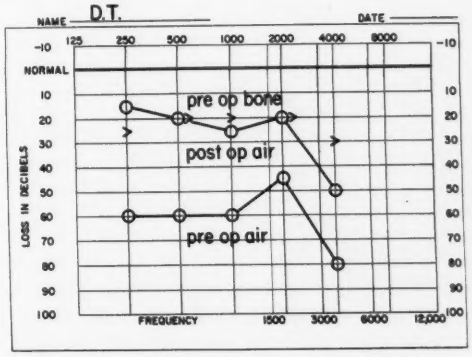

Figure 6.—Closure air-bone gap. (D.T.)

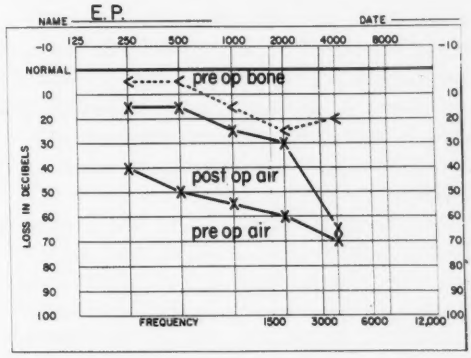

Figure 7.—Closure air-bone gap within 10 decibels. (E.P.)

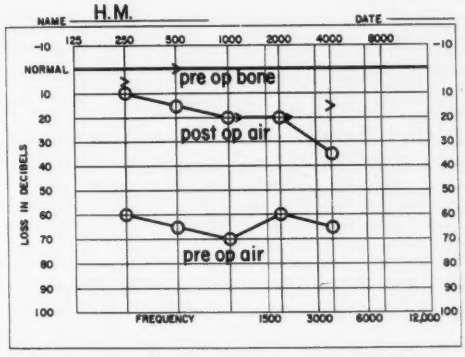

Figure 8.—Closure air-bone gap. (H.M.)

Summary

There are over 17 million Americans with a hearing impairment. One-third of this group has a conductive loss due to damage or disease to the ear canal, eardrum, stapes, eustachian tube or nasopharynx. Early paracentesis and adenoidectomy in children with recurrent ab-

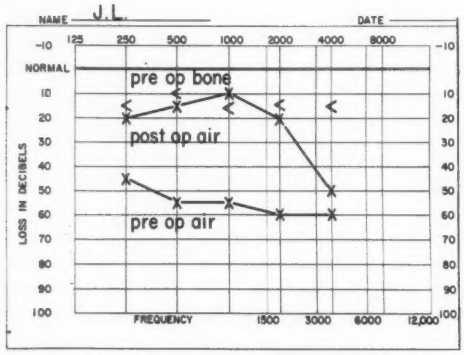

Figure 9.—Closure of air-bone gap. (J.L.)

scessed ears will reduce hearing loss. Adults with fluid in the middle ear following colds—secretory otitis media—often results in adhesive processes in the middle ear with marked hearing losses. Paracentesis and nebulization are essential.

Otosclerosis affects 1 out of 10 people. These people wear hearing aids as they feel nothing further can be done medically. Great strides in rehabilitation of this group to normal unaided hearing has been done by first the fenestration operation and now the stapedectomy and vein graft procedure. Ossicular continuity for normal restoration of sound in 90 per cent of the cases is accomplished by removal of the fixed stapes and its footplate and replacement by a polyethylene strut and vein graft.

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Discussion

Dr. George D. Lyons, Jr. (New Orleans): Dr. Zoller has covered the field of surgical management for otosclerosis. I would like to very briefly review the surgical management for other forms of conductive deafness, particularly those caused by trauma or suppurative otitis media.

The mastoid operation, that is, the simple, modified and radical mastoidectomy is still employed.

Tympanoplasty—The plastic reconstruction of a middle ear has two primary goals. These are sound protection of the round window and sound pressure transformation to the oval window. The indication for tympanoplasty is good cochlear function, eustachian tube function, and elimination of disease processes. The types are as follows:

1. The repair by skin or vein grafts of a perforated tympanic membrane with a normal ossicular chain.

2. The perforation of tympanic membrane with erosion malleus the graft is placed against the ossicular remains.

3. The graft is applied directly to the head of a mobile stapes.

4. The footplate is exposed; a tubal ear is then formed.

5. A fenestration operation is performed usually in the 2nd stage.

A new procedure was introduced by Thomas Rambo known as musculoplasty, in which the temporalis muscle and fascia is introduced into the middle ear and a fenestration performed, similar to Type 5 tympanoplasty.

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Funerals Are Expensive

Nobody several years ago survived the series of illnesses that I have had. If someone tells me that the medicines I carry are expensive I must laugh, particularly when I read circulars advertising graves. I would rather pay for a medicine than a grave any day.—George E. Sokolsky, columnist, King Features Syndicate.

Thoracic Lesions in Infants Requiring Urgent Surgical Care*

• Many infants, newborn or under one year of age, die from lesions of the chest. The possibilities of surgical intervention are discussed by the author.

JOHN L. OCHSNER, M. D.
New Orleans

A LARGE number of fatalities among newborns and infants is due to respiratory failure, cardiac failure, or both. Thus, each year in the United States more than 47,000 infants younger than one year of age die from lesions of the chest.[1] Many of these deaths can be prevented by early recognition and prompt surgical treatment. Thoracic conditions in infants requiring urgent surgical care range from an inhaled foreign body, requiring simple endoscopic removal, to a complicated congenital cardiac malformation necessitating use of extracorporeal circulation for correction. The common bond between these extremes is that each creates a state of urgency, which requires immediate treatment if maximal benefit is to be achieved. The purpose of this paper is to present the indications for and the surgical management of the various lesions of the lung, esophagus, diaphragm, heart and great vessels in infants requiring urgent surgical care.

Pulmonary Lesions

Congenital

Congenital pulmonary cysts usually have a connection with the bronchial tree, and because of this communication, air tension and infection are apt to occur. The absolute indication for surgical treatment is increasing air tension within the cyst. The enlarging cyst will compress the normal pulmonary tissue on the affected side and cause shifting of the mediastinum with subsequent compression of the lung on the contralateral side. This mechanical compression of pulmonary parenchyma results in respiratory distress manifested by dyspnea, cyanosis, and tachypnea with intercostal and sternal retraction.

Treatment consists of resection of the involved portion of the lung. However, in moribund patients, transthoracic aspiration of the cyst as a temporary measure may prove lifesaving. Aspiration of the cyst results in production of a bronchopleural fistula; for this reason a physician should remain in attendance in order to further relieve tension pneumothorax until the cyst can be resected. Treatment of a non-expanding congenital cyst that subsequently becomes infected differs from treatment of a cyst that develops secondary to infection. In the latter instance, medical therapy is usually all that is necessary; however, surgical drainage, or preferably, excision is needed to control infected congenital pulmonary cysts.

Localized pulmonary emphysema, characterized by emphysematous expansion of one lobe, is due to maldevelopment of the bronchial cartilage in most instances, although redundant mucosal folds, compression by an aberrant vessel, or bronchial stenosis secondary to infection, cyst or mucous plugs, may be the etiologic factor. Symptoms of respiratory distress usually occur early in life, most often, during the first month. Bronchoscopy is usually of no benefit.

Once the condition is suspected, immediate removal of the abnormal lobe is mandatory to prevent a tragedy. Caution

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From the Department of Surgery, Ochsner Clinic, New Orleans.

should be exercised not to increase the tension within the emphysematous segment or expanding pulmonary cyst during induction of anesthesia. It is often desirable to delay inhalation anesthetization until after the thoracotomy incision has been made with use of a local anesthetic and the involved lung allowed to herniate through the incision. The affected portion of lung may then be resected without haste.

Inflammatory and Obstructive

Massive aspiration syndrome and *pneumonia* are treated primarily by medical measures; however, complications, which are rather common, necessitate urgent surgical treatment. Bronchial obstruction, secondary to aspiration or infection, produces emphysematous changes distal to the obstruction with occasional resultant pneumomediastinum or pneumothorax. Asymptomatic pneumomediastinum or pneumothorax, secondary to massive aspiration in the newborn, requires no treatment; however, if respiratory or circulatory embarrassment is present, aspiration is indicated and often should be followed by closed thoracotomy with the tube connected to a water trap, so that air can escape but not enter the chest. Because of the increased resistance of certain organisms and the spread of staphylococcal infections, the incidence of surgical complications of pneumonia, such as pulmonary abscess, empyema, pneumatocele, fibrothorax and pneumothorax, has increased.

Empyema and pneumothorax in this young age group require emergency surgical treatment, whereas fibrothorax, pulmonary abscess and pneumatocele rarely require surgical intervention. Pulmonary collapse and toxicity, both sequelae of a pyo-pneumothorax, must be prevented by immediate surgical treatment. Thoracostomy tube drainage placed under water as a seal expands the lung, evacuates the infected material, obliterates the pleural space and approximates the fistulous opening to the parietal pleura. Use of large thoracostomy tubes will accomplish all these and prevent loculated empyema and fibrothorax. Residual pneumatoceles usually will disappear after medical therapy of the pneumonia. However, if these become tension cysts, or if trouble, such as recurrent abscesses or bronchiectasis persists, resection becomes necessary.

Traumatic

The resiliency of the rib cage in infants, plus the fact that they are not subjected to the hazards of adulthood, account for the low incidence of external violence in infants. Treatment of thoracic injuries in the infant does not differ from that in adults and should be directed toward providing an adequate airway, stabilizing the chest wall, expanding the lung, and evacuating the pleural space of air and blood.

Foreign bodies within the tracheobronchial tree are surgical emergencies because of the immediate and potential dangers associated with them. They may obstruct or perforate. An attempt should be made to remove the foreign body by bronchoscopy. If this is unsuccessful, the particle should be removed through a bronchial incision.

Resuscitation of the newborn often requires positive pressure insufflation, either by mouth-to-mouth breathing or by direct intratracheal intubation. If the pressure applied is too great or if the inflation period is too long, *iatrogenic rupture* of the over-distended alveoli may occur. Intratracheal anesthesia in an infant, although necessary and often the safest type of anesthesia, carries this risk. If pneumothorax develops, emergency thoracentesis should be instituted, followed by tube thoracostomy drainage.

Esophageal Lesions

Congenital

Routine aspiration of the gastric contents of the newborn immediately after delivery has resulted in demonstration of many cases of *esophageal atresia* in the first few minutes of life. Pneumonia is inevitable in these infants because of aspiration either from overflow from proximal blind pouch or through a tracheo-

esophageal fistula. Early recognition and surgical correction will minimize the incidence of this complication.

Once the diagnosis is established, correction may be accomplished by ligation of the fistulous tract and anastomosis of the proximal and distal esophageal segments. If the distance between the two esophageal segments is too long for approximation, an alternate surgical procedure must be performed: (1) sliding the stomach up through a dilated esophageal hiatus to permit anastomosis of the two esophageal segments, or (2) a two-stage procedure consisting of first establishing esophagostomy and gastrostomy, and later, substernal colon or jejunal interposition between the esophagus and stomach.

Enterogenous *duplication cysts*, which arise in the posterior aspect of the mediastinum, are seldom asymptomatic, since they lie close to the trachea, esophagus and great vessels. Cyanosis, dyspnea and tachypnea are often present, and recurrent infection of the upper respiratory tract and hemorrhage may occur. Since most cysts do not communicate with the gastrointestinal tract, accumulation of secretions causes progressive enlargement of the cysts. Treatment is surgical excision with meticulous dissection to separate the cyst from the esophagus. It is often necessary to leave a muscular portion of the cyst wall attached to the esophagus to avoid esophageal injury.

Traumatic

Caustic burns are mentioned only to condemn early intervention. Bouginage during the acute inflammatory phase may further augment the damage. It is the practice in our Clinic to have these infants swallow a string immediately after injury, and after subsidence of acute inflammation in ten to twelve days, to ascertain the location and extent of injury by roentgenography after ingestion of lipiodol. If a stricture becomes apparent, bouginage should be deferred until four to six weeks after ingestion. Administration of steroids and a broad-spectrum antibiotic in the early phase of injury is gaining wide acceptance.

Foreign bodies in the esophagus are commonly encountered in infants. Although these can usually be removed successfully by esophagoscopy, some, because of complications, require emergency operation. If the foreign body is firmly wedged and cannot be broken, or if there is real danger of perforating the esophagus by manipulation, open thoracotomy should be done. Exploration should be from the right side of the thorax, in order to give access to the entire esophagus, and the material should be removed through esophagotomy. Sharp foreign bodies easily perforate the esophageal wall and cause acute mediastinitis, pericarditis or empyema. If perforation and its complications are unrecognized, they may prove fatal. Open thoracotomy with removal of the foreign body, repair of the esophageal laceration and adequate drainage of the mediastinum and pleural space will prevent disastrous sequelae.

Diaphragmatic Lesions

Occasionally, symptoms of a *congenital diaphragmatic hernia* are minimal and the condition is discovered in the course of routine examination. However, usually there is difficulty in establishing adequate respiration in the neonatal period. The symptoms are dyspnea with periods of cyanosis, particularly severe when the infant is turned on the good side. Once the diagnosis is established, the hernia should be repaired regardless of the degree of respiratory distress or the size of the infant. Delay in correction will result in accumulation of air in the gastrointestinal tract with further compression of pulmonary tissue and increased danger of obstruction to the herniated abdominal viscera.

A Levin tube should be inserted as soon as the diagnosis is suspected in order to keep the intestinal tract decompressed until operation is possible. Surgical approach in the newborn should be through the abdomen because evisceration of the abdominal contents makes reduction and

repair of the hernia easier and other associated intra-abdominal anomalies, which occur in approximately 30 per cent of cases, can be recognized and concomitantly treated. Also, lack of intra-abdominal space can be accommodated by undermining and closing the subcutaneous fat and skin only.

Postoperatively, the lung expands slowly but progressively. Therefore, vigorous attempts to expand the small, hypoplastic-appearing lung should be avoided. Overdistention of the normal lung may occur with mediastinal emphysema and creation of a pneumothorax.

Eventration of the diaphragm may cause severe respiratory distress early in life and simulate the clinical manifestations of congenital diaphragmatic hernia. The abnormally high but intact diaphragm may be due to *congenital* absence of the diaphragmatic muscle or *acquired* paralysis of the diaphragm from phrenic nerve injury at birth. Regardless of the etiologic mechanism, immediate surgical correction of the elevated diaphragm should be performed in infants who exhibit respiratory distress. Plication of the diaphragm to assure a position of mid-expiration can be achieved by an abdominal or thoracic approach.

Cardiovascular

The mere presence of a congenital malformation of the heart or great vessel in an infant is not sufficient indication for surgical intervention. Many of these infants who fail to thrive may improve with careful management. However, if the beneficial effects of medical therapy are temporary or if doubt exists regarding survival, early surgical treatment is imperative. The most common indications for urgent surgical treatment are cardiac failure that does not respond promptly to medical therapy, and frequent or severe anoxemic spells. Tracheal obstruction due to a congenital malformation of the mediastinal vessels is a rare but definite reason for surgical relief.

Cardiac failure that occurs as a result of increased pulmonary blood flow is treated ideally by surgical obliteration of the anatomic defect responsible for the systematic-pulmonary shunting of blood. However, often the risk in an extremely ill infant for correction of an intracardiac defect necessitating extracorporeal circulation lends favor to a less dangerous palliative procedure. The pulmonary blood flow can be diminished by constriction of the main pulmonary artery to decrease the pulmonary arterial pressure to approximately 30 per cent of the systemic pressure. Complete correction of the various defects can be delayed until a later date when both the size and physical condition of the child are more favorable. Surgical removal of an obstructing malformation will result in dramatic improvement of the infant who shows cardiac decompensation as a result of increased resistance to ventricular output.

Anoxemia is manifested in the infant by paroxysmal episodes of dyspnea, associated with severe cyanosis. If anoxemia is due to reduced pulmonary blood flow, surgical production of a systemic-pulmonary artery shunt will increase oxygenation and render palliative improvement. Experience has shown, however, that systemic-pulmonary artery anastomosis in the presence of an intact ventricular septum, regardless of the inadequacy of pulmonary flow, will lead to congestive heart failure.[2] Hence, in such a situation, surgical measures must be directed toward correction of the obstructing mechanism that causes decreased pulmonary flow. If pulmonary blood flow is adequate, but anoxemia exists because of inadequate communication between the pulmonary and systemic circuits, surgical creation of an atrial septal defect is the procedure of choice.

Various anomalous vascular arrangements within the mediastinum compress the trachea and esophagus and are manifested by stridor, dyspnea, and occasionally, dysphagia. The need for treatment is dependent upon the degree of constriction produced by the vascular ring. Only surgical interruption of the constricting vascular ring can relieve symptoms.

Conclusion

Many infants die as a result of intrathoracic lesions that are amenable to urgent surgical treatment. It behooves all physicians to be cognizant of the various physiologic disturbances brought about by these lesions, for early diagnosis and prompt surgical treatment will prevent many unnecessary deaths.

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The Fallacy of "Markups"

Let me recall to your mind a series of headlines concerning fantastic "markups." One such set of headlines charged a 7000% markup *over the ingredient cost* of one Schering Corporation drug! . . . I can tell you that we at Baxter have a product with a far more astronomic markup *over ingredient cost* than anything the (Kefauver) committee released for the front pages. One of our ingredients has a markup of more than half a million per cent—675,000% to be exact. That ingredient is water. . . . Actually, this fabulous markup gives us a sales profit of 7.1%. We are not selling the ingredient. You can get that out of a faucet. We are selling injectable distilled water which will not cause a fever when introduced into the blood stream.—William B. Graham, President, Baxter Laboratories, Inc., to the Investment Analysts Society of Chicago.

Clinical Experience With Fluphenazine (Prolixin®) A New Phenothiazine Drug*

• Trial and results of the use of a new tranquilizer on a group of forty-eight nonpsychotic patients are analyzed.

MELVYN F. KOSSOVER, M. D.†
ALLAN M. GOLDMAN, M. D.‡
New Orleans

TRANQUILIZING drugs have established a prominent position in medical therapy. These drugs have been classified as those which bring about reduced mental tension, relieve anxiety, and result in a more calm outlook without producing any marked degree of sedation or hypnosis.[1] Fluphenazine, or Prolixin®, one of the newer tranquilizing agents, has been shown to be an effective phenothiazine compound in the treatment of the psychotic or severely mentally disturbed patients. Since this drug might be equally effective in the non-psychotic patient, this clinical survey with fluphenazine was undertaken.

In 1956, thirty-five million prescriptions were written for tranquilizers, and it is believed that now their use is second only to antibiotics. In view of the wide variety of such drugs available for the relief of emotional tension, the physician should select a drug wisely in order to obtain maximum results for his patients.

The phenothiazines represent the most important class of tranquilizers, and several of the more potent agents are now available. These drugs have been in clinical use since the properties of promethazine were discovered in 1946 and especially since the advent of chlorpromazine in 1952. These agents are indeed effective in patients with excitement, agitation, hallucinations, and overactivity. They are of no value in depression and should be avoided unless there is agitation. They act primarily at a subcortical level rather than at the cortical sleep-producing level and do not significantly depress the medullary vital centers.[2]

As chlorpromazine and the other phenothiazine derivatives became more popular, it was apparent that certain toxic effects occurred. These included an obstructive type of jaundice, agranulocytosis, skin rashes, and extra-pyramidal activity.[3] Then the addition of the piperazine ring to the basic chlorpromazine formula not only caused a marked change in the potency of the drug by increasing the tranquilizing effects, but also the incidence of agranulocytosis and jaundice has been significantly reduced. However, the incidence of extrapyramidal reactions has been greater when higher doses were used.

In an attempt to further improve on the phenothiazine molecule the trifluoro-substituted phenothiazines have been introduced. Here the effects were mainly tranquilizing, and the action was longer than that of chlorpromazine with a dose every twelve hours frequently being satisfactory. In this category fluphenazine or Prolixin® has been developed; this drug is a trifluoromethyl-hydroxyl-ethyl piperazinepropyl derivative of phenothiazine. Chemically fluphenazine is 4-(3-[2-(trifluoromethyl)-

* Study supported by Grant from E. R. Squibb Company.

† Resident in Medicine, Touro Infirmary, and Assistant in Medicine, Tulane University School of Medicine.

‡ Chairman, Department of Medicine, Touro Infirmary, and Assistant Clinical Professor, Department of Medicine, Tulane University School of Medicine.

From the Department of Medicine of Touro Infirmary and of the Tulane University School of Medicine, New Orleans, Louisiana.

10-phenothiazinyl] propyl) 1-piperazineethanol dihydrochloride.

In clinical trials, fluphenazine has displayed maximal tranquilizing effects and has exhibited strong anti-hallucinatory and anti-delusional action in the treatment of psychotic patients. It possesses pharmacodynamic action of the same type as chlorpromazine, but milligram for milligram, it has been shown to be more potent than the older preparation.[4] This drug has been shown to be highly effective in the treatment of agitation, excitement, explosive behavior and turbulence commonly seen in severely psychotic states.[5] It has been reported to modify favorably paranoid ideation and in alleviating obsessive-compulsive behavior.[6]

To date all reported studies with fluphenazine have been mainly with these types of psychotic patients. Therefore, to evaluate the effectiveness of this new phenothiazine preparation on non-psychotic patients, this clinical investigation was conducted using fluphenazine only on patients whose symptoms might be associated with anxiety or tension.

Material and Method

Fluphenazine was administered to 48 patients over a seven month period from June, 1960, to January, 1961. The majority of the patients were selected from the Out-Patient Department, Touro Infirmary, New Orleans, Louisiana. Several of the patients were started on the drug while in the hospital. In this group of patients, ages ranged from 19 to 72 years, with a mean age of 46 and a median age of 50 years. Because of the predominance of white patients in this clinic, there were only 11 non-white patients in our series. Fifteen of the patients were males, and 33 were female. (See Figure 1.)

Fluphenazine was used as adjuvant therapy in four cases of myocardial infarction and angina to allay anxiety associated with this organic process. Likewise, the preparation was administered to diminish the accompanying tension in two cases of peptic ulceration. In the remaining cases a complete medical survey was

Figure 1.

conducted prior to therapy with fluphenazine which revealed no organic basis for the initial complaints. To our knowledge, none of these patients had received previous psychiatric therapy nor were they considered to be basically psychotic.

The basic psychological problem was not emphasized during the patient visits, and no form of psychotherapy was undertaken. All patients were selected from general medical clinics or the general medical wards. Ambulatory patients were seen biweekly initially, then weekly, and then at monthly intervals. During these visits relief of the patients' symptoms were evaluated and dosage of the drug was regulated for the individual patient.

Six dosage schedules were utilized in the therapy with fluphenazine: 0.25 mgm. tablet two, three, or four times per day; 1.0 mgm. tablet two or three times per day; and 2.5 mgm. tablet only once per day. The dosage and frequency of the drug was varied from time to time during the study in order to obtain maximum efficiency with the smallest dose.

In 28 of the 48 patients placebo therapy was administered. The placebo was either substituted for the actual preparation while the patient was being maintained on the drug or used as the initial form of therapy. Results with the placebo were compared with those of the actual preparation, and thus each patient served as his own control. The patient was unaware of the change in therapy.

The patient was considered improved

if, after having received the drug for one month, he demonstrated relief in the symptoms for which the drug was utilized, and also after at least three months, no recurrence of these symptoms had occurred.

Results

The presenting symptoms for which therapy with fluphenazine was initiated are listed in Table 1. The basic psychological problem was not investigated but merely a brief understanding of the patient's initial complaints. Many of the patients presented multiple difficulties, and thus there existed the disparity between initial symptoms and number of patients in the series. Fluphenazine was given in combination with narcotics for relief of pain in two patients with carcinoma of the lung. General anxiety, tension, and agitation were the most frequent symptoms for which therapy was prescribed.

TABLE 1
PRESENTING SYMPTOMS FOR WHICH THERAPY WAS INITIATED

	Symptom	Frequency
1.	Anxiety	17
2.	Tension	13
3.	Agitation	12
4.	Headaches	10
5.	Chest Pains	9
6.	Abdominal Symptoms	8
7.	Depression	6
8.	Weakness	3
9.	Relief of Pain with Narcotics	2
10.	Obsessive Compulsive	2
11.	Back Pain	2
12.	Insomnia	1
13.	Phobia	1

Out of the forty-eight patients to whom fluphenazine was administered, forty-two, or 87.5 per cent, showed improvement in the symptoms for which the drug was given. The average length of administration of the drug was four and one-half months, with over half of the group receiving the medication for the entire seven months. To date, none of this group has had recurrence of symptoms, and no new symptoms have been encountered.

In six of the cases, which included 5 females and 1 male, 4 white patients and 2 non-white patients, the preparation failed to cause any improvement and in fact made the patient worse. The drug was then discontinued two to four weeks after the initial administration. In three of these cases, the patients described increased fatigue, lethargy, and sleepiness due to the drug; whereas, in the other three cases an exaggeration of the presenting symptoms, including depression, headache, and abdominal pains, became apparent. As in the improved cases, the dosage of the drug was varied before we would definitely conclude that the patient showed no improvement to therapy. With the exception of these cases, no other significant side effects were noted in any of the patients receiving fluphenazine.

Table 2 reveals the various dosage schedules employed and the number of patients maintained effectively on each dose. It becomes readily apparent that the 1 mgm. tablet twice a day (giving a total of only 2 milligrams per day), one in the morning and one in the evening, was the most effective dose in our series. In 10 of these cases, the 2.5 mgm. tablet once a day was substituted; however, this

TABLE 2
DOSAGE USED

Size of Tablet	Dose per Day	Fluphenazine	Number of Patients	Number of Patients Improved	Total Improved
1 mgm.	B.I.D.	2 mgm.	24	22	48 %
1 mgm.	T.I.D.	3 mgm.	2	0	0 %
0.25 mgm.	Q.I.D.	1 mgm.	5	4	8 %
0.25 mgm.	T.I.D.	0.75 mgm.	9	9	18 %
0.25 mgm.	B.I.D.	0.50 mgm.	2	2	4 %
2.5 mgm.	Q.D.	2.5 mgm.	6	5	9.5%
		TOTAL:	48	42	87.5%

change was effective in only one case. In the remaining 9 patients the original dosage schedule was resumed, and improvement continued.

In the 28 patients on whom placebo therapy was employed, 22, or 79 per cent, had recurrence of the symptoms within two to four weeks after the initiation of the placebo therapy. In addition to this, in 4 patients on whom placebo was the initial form of therapy, no alleviation in initial symptomatology was noted after two to four weeks. In only 2 of the 28 cases, or 7 per cent, no clinical relapse was detected with placebo therapy.

Discussion

Fluphenazine, or Prolixin®, has repeatedly been shown to be an effective tranquilizing medication in hospitalized psychotic patients and outpatients. In the studies presented here, fluphenazine has been demonstrated to diminish anxiety and tension to a remarkable degree in the non-psychotic patient. Anxiety was banished without changes in judgment, mental skill, or behavior. The drug has also been shown to be effective in combatting anxiety complicating physical illnesses.

Previous reports on the use of fluphenazine in psychotic patients have stressed its potency and thus the necessity for lower dosage levels. Likewise, in our series of non-psychotic patients, the potency of the drug was evident as the low dosage schedule indicated. Two milligrams daily was by far our most effective dose. There was virtually no advantage in giving more than the two daily doses, as an adequate level appeared to be achieved and maintained on this regimen. The single dose tablet (2.5 mgm.), although adequate in several cases, did not appear to be as effective as the morning-evening treatment.

The relatively infrequent dosage schedule appeared to be a tremendous aid in the administration of fluphenazine in the ambulatory patient. Whereas other phenothiazines and tranquilizers used in the treatment of psychoneurotic patients are most often prescribed three to four times per day, the 2 mgm. of fluphenazine per day in two divided doses was indeed an adequate dosage level for optimal tranquilizing effects. The 0.25 mgm. tablet was effective in the hospitalized patient although its advantages in the ambulatory patient is questioned unless the dosage of phenothiazine necessary is minimal. Taylor [7] in 1959, reported 2.5 mgm. daily to be the most effective dose in the average case; our average dose of 2.0 mgm. per day was in close agreement with this earlier report.

Patient acceptance of the medication was definitely gratifying. The most frequent comment made by the patients was: "I feel better now than I have in a long time." Rarely did a patient neglect to take the medication, and the patients appeared quite anxious to receive an additional supply of the preparation at each visit.

Side reactions were conspicuous by their absence. Such complications with phenothiazine therapy as seizures, hypotensive crises, jaundice, or agranulocytosis, as reported by Hollister [8] and other investigators [9, 10] were not observed in our series. The high incidence of extrapyramidal reactions reported by Freyham [11] with various phenothiazine compounds was not noted in this study; and indeed, in no case was there need for "antiparkinson" drugs. The most logical explanation for the lack of side reactions with fluphenazine appears to be twofold. First in importance is the low dosage that was employed with therapy with this new phenothiazine, and of probable equal importance was the change in the chemical structure from that of the basic chlorpromazine formula.

Nonetheless, although no significant side effects were noted in this study, our series was small, and fluphenazine is a phenothiazine-type drug. Hence, the physician must be mindful of some of the expected effects which may occur, although we believe them to be minimal with fluphenazine therapy.

In the group of patients on whom placebo therapy was employed, each patient

served as his own control. In this group, all but two of the patients manifested a clinical relapse with the initiation of the placebo; this fact confirms even further the effectiveness of this preparation rather than the basic support which the psychoneurotic patient receives from frequent visits to the physician.

The variety of initial complaints which the patients in our series presented emphasizes the vast range of functional states for which fluphenazine is potentially effective. The degree of effectiveness in the various psychoneuroses should be manifest in future studies.

Goldman [12] has reported fluphenazine to be of unquestioned usefulness in formerly psychotic patients in remission. Likewise, we have shown fluphenazine to be as useful, if not more effective, in the ambulatory non-psychotic patient. Hence, we believe that fluphenazine, or Prolixin®, is an effective, potent, and safe phenothiazine-type drug available at this time.

Conclusions and Summary

1. Fluphenazine, or Prolixin®, was used used on 48 non-psychotic patients for an average of 4.5 months at Touro Infirmary, New Orleans, Louisiana.

2. Eighty-seven and one-half per cent of the patients on whom fluphenazine was used showed improvement in their initial symptomatology.

3. Two milligrams per day in two divided doses was the most effective therapeutic dose.

4. Only two patients displayed equal effectiveness with fluphenazine and placebo therapy.

5. No significant side effects usually associated with phenothiazine therapy were noted.

6. Fluphenazine has been shown to be effective in a wide variety of functional disorders.

7. The therapeutic effectiveness of fluphenazine in the non-psychotic patient is comparable to that in the psychotic patient.

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Miracle Drugs . . . Household Words

Over the past 20 or 30 years medical contributions to the health and welfare of our people through careful research have been magnificent. That this is true is clearly evidenced by the fact that miracle drugs, lifesaving vaccines and new types of equipment have become household words even for the man on the street.—Charles S. Rhyne, former president, American Bar Association.

What is Hypnosis*

• The author advances the hypothesis that hypnosis is an innate ability of man to attain a state of hibernation which ability must be developed by a teaching-learning process.

ESMOND A. FATTER, M. D.
New Orleans

THOSE who have investigated the phenomenon of hypnosis have concluded that it is undefinable.[1, 2] Hypnosis has been described, discussed, and observed clinically from many viewpoints and many theories have resulted to explain its mechanism.[3, 10] However, though many of the opinions have been most impressive, none can be fully accepted for each one seems to present a particular facet of a very complex puzzle, but no one theory fits all of the pieces together to make it wholly and universally accepted.

From the standpoint of definition, hypnosis may be compared with the phenomenon of love. Many have attempted to define it but no mortal being has successfully done so; all men have experienced it, poets and philosophers have written about it—even lives have been given for its true explanation; but its definition is still awaited. And so stands the definition of hypnosis.

With this comparison in mind I would like to present several ideas which could and might throw a ray of light on the title question asked—What is hypnosis?

Natural Phenomenon

It is my intention to develop the idea that hypnosis is a natural phenomenon which became part of man's constitutional endowment through phylogeny. Let us first define the word natural as innate, inborn, true to life; occurring in nature, characteristic of or explainable by the operations of the physical world; not artificial, synthetic, processed or acquired by external means.[4] It is an accepted fact that man came into being by a natural process and that all of his abilities have also been acquired naturally, man evolving gradually during the process of phylogenetic development. Man's physical, physiological and biological characteristics are similar to those of the animal kingdom, and he is also governed by the same biological laws that govern the other animals. Man's resemblances to the animals are stronger than his differences from them; however, man differs from all other living creatures and things in that he alone has keenly developed intellectual faculties and spiritual qualities, giving good reason for his name classification, *homo sapiens*, translated from the Latin as "wise man". The intellectual development, which forms the most important difference between man and the lower animals, is man's ability to think and to learn from his experiences and through the use of reason he is able to adapt himself to his environment, and he has the ability to adapt his environment to suit his needs.[5] On the other hand, animals primarily seem to react to environment instinctively.

The transition which has occurred in man's intellectual development can be said to be represented biblically by Adam who was the first recorded animal to become aware of the feeling of shame. With the new mental capacity afforded him, Adam's resultant behavior was motivated by feelings of fear and guilt (Gen. 3:1-13). This could be known then as the first description of the transition from instinctual reactions of animals to behavior patterns of man motivated by thought, reason and feelings, thereby, resulting in the evolution of Adamic man.

* Presented at the Eighty-first Annual Meeting of the Louisiana State Medical Society, May 10, 1961, in New Orleans.

State of Dormancy

Self preservation and perpetuation of the race are the first laws of nature; nature, being quite often referred to as Mother Nature, implying its parental protection. Mother Nature has provided both plants and animals with certain constitutional endowments, many of which are directed toward propagation and survival. One of the most valuable of these protective mechanisms possessed by living material is the ability to go into a state of dormancy. Dormancy is a state in which physiology and biochemistry are altered so that life is maintained at the minimal rate possible for continued existence. This vital state enables the plant or animal to conserve, preserve, maintain and protect itself from certain ecological factors, for sufficient periods of time, during which they may be exposed to destructive elements within their environment. For example, certain plants, known as deciduous, lose their leaves in winter; it is explained that the sap, so called, "goes down" and the plant appears lifeless. During this dormant period chemical and physiological changes occur which are designed to conserve, preserve, maintain and protect the plant giving maximal security to its survival and its eventual return to complete biological functioning at some future time. The plant need not be taught to attain this state; its attainment is initiated by changes in atmospheric conditions, primarily that of temperature. This process applies to that group of plants known as perennials and they maintain their existence year after year with this highly developed protective mechanism.

This same mechanism is also found in bacteria that attain a state of spore formation when the environment becomes too hot, too cold, or too dry for them to carry out their life processes; this mechanism is also designed for their protection, simulating the state just described as dormancy. We know that entamoeba histolityca will attain a cystic state, the lung fish a state of estivation, and the land animals and insects a state of hibernation. Hibernation is the Latin for "winter sleep". Among the hibernators may be mentioned the snail, earthworm, queen bee, butterfly, fly, frog, chipmunk, bear, opossum, badger and many other members of the animal kingdom who make use of this dormant state. The badger hibernates straight through the winter; other animals such as the chipmunk and gopher also hibernate but become active on pleasant days and care for their biological processes. Other animals, such as the lizard, change color when in danger; the fawn freezes as though made of wax or stone when harm approaches, and it maintains this freeze position long beyond the endurance of voluntary control. Also the opossum when threatened goes into a hibernation state, his heart rate is minimal, oxygen consumption is reduced markedly, odor fails to be emitted, even an ant or fly can crawl across the cornea without eliciting a response. To the enemy of the opossum he is dead, but let danger dissipate and the opossum very quickly comes out of his dormant state and flees to safety. He feigned death—he played possum.

A considerable amount of scientific investigation has been carried out and much information gathered concerning the changes in physiology and biochemistry from the wakeful to the hibernation state of the lower animals. The information seems to repeat the same theme over and over again—that the animal alters its physiological and biochemical processes for its own well being—again to conserve, preserve, maintain and protect itself.

If the dictum, "Ontogeny recapitulates phylogeny", be true, then it is also true that man has acquired all of his characteristics and abilities during the course of his development through the phylogenetic scale. A proven truth must consequently act as a springboard for proof of the truth of many related factors. If the above statement be true, hypnosis (so-called for lack of a better name) possesses many of the characteristics of the hibernation mechanism and like hibernation seems to present itself as a conserver, preserver, maintainer, and protector of its

subject. Certainly the basic nature of hypnosis seems to be rooted in the phenomenon of hibernation. The hypnotic state has been reported repeatedly and by many authors to be of benefit in many clinical situations such as: Control of intractable pain in terminal illness, asthma relief, production of general anesthesia for major surgery, to relieve anxiety and fear pre and post operatively as an adjunct to general anesthesia, control of pernicious vomiting of pregnancy and to maintain postoperative comfort; these to cite only a few for the list would be too long and too monotonous to complete. As you can see the theme is to conserve, preserve, maintain, and protect — the same theme is found in animal hibernation. In hypnosis we seem to find the ability of man to hibernate coupled with man as a psychological being. However, man must develop his innate ability through learning, and with a teacher, learning progresses faster. The teacher also makes it possible for the pupil to recognize his abilities.

Early Use in Medicine

Let us develop this idea a little further. Esdaile [6] working in the 1840's used hypnosis to develop surgical anesthesia in his patients. This he accomplished very well. In reading Esdaile's descriptions of his work, it is interesting to note that his patients not only developed the anesthesia necessary for the surgical procedure but also reacted to the surgery and infectious process for which the surgery was done as though antibiotics were used in conjunction. His mortality rate was tremendously reduced with the use of hypnosis in his work. One may argue that this reduction of his mortality rate was due primarily to pain reduction. From reading his works one could speculate, and justly so, that some mechanism was at work to preserve, conserve, maintain, and protect and that the achievement of pain reduction did not supply the entire answer to the antibiotic-like response.

Berger and Simel [7] investigating the influence of hypnosis on intraocular pressure in normal and glaucomatous subjects found that on direct suggestion for symptom removal, all glaucomatous patients showed a drop in pressure of one or both eyes to a level as low as (in one case) or lower than (in six cases) the lowest recorded tension during the previous twelve months that they had been followed.

Self Hypnosis and Autogenic Training

Hoppe [8] distinguishes between self-hypnosis and autogenic training, as described by Dr. I. H. Schultz, and yet agrees that autogenic training is rooted in hypnosis and may be classified as self-hypnosis. Be that as it may, the patient is taught to attain a hibernation-like state through six psychophysiologically-oriented subjective feeling exercises. No direct or indirect suggestions were made to the patients referable to symptomatology. His conclusions are, and I quote, "In summary, our own experiences as well as those made by others, it may be pointed out that neurotic, and under certain circumstances, psychotic patients may derive special benefits from the autogenic training. Autogenic training may decrease or even remove the symptoms of an actual neurosis, but in itself is not sufficient to cure a psychoneurotic illness." Again the same protective theme.

Hock [9] discussing the potential application of hibernation to space travel, distinguishes between natural hibernation and artificial hibernation as used to describe hypothermic anesthesia. He brings out the point that there is no similarity in the two. He poses the question that if a state of hibernation could be achieved in man, then some of the problems of space travel could be answered. He considers man as a potential hibernator and he feels that concentrated study should be made of mammals, with hibernating abilities, particularly the black bear who achieves an intermediate condition of hibernation which condition he feels can be more readily duplicated by man. He apparently hopes to achieve this by alteration of environment and makes no mention of achieving it through psychological means which could be what is observed and called hypnosis. His main objective

is to conserve, preserve, maintain, and protect man in space travel.

Summary and Conclusions

1. Man has been presented primarily as a psychological being and contrasted with the lower animals which are primarily instinctual beings.

2. Man has stronger resemblances to the lower animals than his differences from them. The most important difference is that man has the ability to think and to feel and thereby is able to adjust himself to his environment and adjust his environment to suit his needs.

3. Both plants and animals have been endowed with the ability to attain a state of dormancy or hibernation in which physiology and biochemistry are altered so that life is maintained at a minimal rate possible for continued existence to conserve, preserve, maintain and protect.

4. It could be that the ability to hibernate became part of man's constitutional endowment through phylogeny and that this ability coupled with man's psychological endowment results in what is observed and described as hypnosis. However, this ability, innate in man (as many others are), must be developed by a teaching-learning process. The possibilities for the extent of this development seem limitless.

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Not True to Life

The inference is not justified that our scientifically trained and able doctors are not capable of critically evaluating the publications of new drugs. Doctor friends have told me that the intimate doctor-patient relationship has been damaged by such inferences from Washington and by articles like the one appearing recently in LIFE which urged patients to press their doctors to prescribe cheaper drugs. Most of you probably saw the LIFE article entitled "A Big Pill to Swallow" but did not see the later ad in LIFE or the letters to the editor pointing out numerous errors of fact in the original article, including the fact that the drug on which the article was centered retailed at an average price of only 11.3¢ and not 30¢ as LIFE had written.—*The Drug Industry—Robbers or Heroes?:* Alex Guerry, Jr., President, Brayten Pharmaceutical Company.

The Journal of the Louisiana State Medical Society

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Editorial

Attitude Toward Radioactive Fallout

A close friend said: "The first prerequisite for having a definite opinion on any subject whatsoever is to know nothing at all about the subject. The minute one begins to have knowledge of a field, he begins to equivocate, to have some diffidence in thinking and shows caution in expressing an opinion."

The two aspects of this epigram apply to much that is written on the subject of radioactive fallout. However, since this situation exists and since we as physicians are being asked to interpret what may be called the conflicting currents in the floating knowledge of this topic, it is timely that at least a tentative opinion be expressed.

In these columns, another phase of this matter was discussed [1] in regard to diagnostic x-ray exposure. It was stated that the weight of authority felt the obligation of the physician and radiologists was to employ technical procedures that would give the minimum of radiation; that radiation in pregnancy, as a general principle, should be avoided; and that radiation to the gonads should be kept to a minimum. It was felt that all other diagnostic radiation exposure should be used as needed and without fear.

In the matter of fallout, the several positions taken by the authorities do not leave us with a satisfactory guide. The subject needs to be considered in its several aspects.

Toward understanding of the matter, it must be realized that we are constantly living in a world of radiation effect to which the fallout problem is added. The radiation that we are experiencing comes from the sun, the earth, the cosmic rays, and the potassium in the body. Added to this is that for medical and dental x-rays, luminous devices, power plants, and television. The fallout from atomic tests approximately equals that from television.

The sum total of this so-called normal

[1] Editorial. J. Louisiana State M. Soc. 113: 210 (May) 1961.

radiation is one micromicrocurie plus or minus 0.5 per square yard of air. In the New Orleans area, on September 18, 1961, following the successive explosions in Russia, this figure reached 244. However, authorities agreed that concern might be generated if this level stayed at a few hundred for a considerable length of time and would be worried only if it reached several thousand, over a similar time.

A report from the Medical Research Council of Great Britain indicates from thyroid gland study that nuclear explosions before 1960, were unlikely to have exceeded one quarter of the radiation received from natural sources during any year. The U. S. Atomic Energy Commission said on October 31, 1961: "It is estimated that increasing the current level of strontium 90 in the United States by manyfold would still result in less strontium 90 in the bones than permitted by the radiation-exposure guides now in effect for the general public for normal peacetime operations."

The inference from these various reports is that up to now there is no need to worry about fallout. It is possible, of course, that the misanthropic Russians may continue nuclear explosions in such volume and numbers, either on their own soil or attempted on ours, to the point that we will be continuously exposed to sufficient fallout which would exceed any tolerable or "permissible" dose.

When radiation exceeds the amount which has been arrived at as a permissible dose, its effects need to be considered both in the somatic and genetic fields. The survivors of the Hiroshima and Nagasaki bombs are reported as showing an appreciable, though not large, increase in the incidence of leukemia. No genetic effects were recognized.

The Rongelap natives who were caught in the fallout from the 1954 tests have shown minor skin damage, and a tendency towards baldness, which was usually reversible.

In the field of the genetic damage following radiation, there is much controversy. The estimates of ultimate damage are made upon the changes that follow radiation to fruit flies and mice. Mutations have been the effects studied. They are alterations in the genetic structure of a species. There is no threshold dose necessary to produce mutations. They can occur spontaneously in every living thing. Naturally occurring background radiation is believed to account for somewhere between 10 and 50 per cent of mutations in humans. Some geneticists have reported mutations following the wearing of tight trousers, producing high gonadal temperatures, and concluded that the mutation rate among the male genes might imply a genetic hazard 100 to 1000 times greater than those estimated from different sources of radiation.

Deductions from experimental data, by investigators in some fields, have been expanded to imply a risk to the race, which is not susceptible of proof. Conservatives in this field, however, have estimated that if the whole population were to receive an average of 10 roentgens per generation for many centuries in addition to natural background radiation, the mutation rate would theoretically increase 20 per cent and would raise the genetically defective population from the figure of 2 per cent to one of 2.4 per cent.

The observed effects of fallout do not agree with the estimated effects. In view of the unsettled state of our knowledge, it seems reasonable to state that we have little to fear from what has passed, and unless the forseeable future brings disaster and radiation far in excess of anything anticipated, we should not live in daily fear of fallout at this time.

ORGANIZATION SECTION

The Executive Committee dedicates this section to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

SUMMARY REPORT ON ACTIONS OF THE HOUSE OF DELEGATES AMERICAN MEDICAL ASSOCIATION FIFTEENTH CLINICAL MEETING

November 26-30, 1961

Denver, Colorado

Social Security health care, relations with the American College of Surgeons, organization of the American Medical Political Action Committee, medical discipline and polio vaccine were among the major subjects acted upon by the House of Delegates at the American Medical Association's Fifteenth Clinical Meeting held Nov. 26-30 in Denver.

Sounding the keynote for the Association's campaign to oppose enactment of the King-Anderson type of legislation in 1962, Dr. Leonard W. Larson of Bismarck, N. D., AMA president, told the opening session of the House that proposals to incorporate health care benefits into the Social Security system "would certainly represent the first major, irreversible step toward the complete socialization of medical care."

The compelling issue, Dr. Larson declared, is socialization versus voluntarism—or compulsion versus freedom of choice. He predicted that courage, determination and the will to win on the part of physicians will bring defeat of the King-Anderson Bill in Congress next year.

Pointing out that "we are engaged in an historic struggle to preserve our country's unique system of medical care and our stature as a profession," Dr. Larson said:

"We are **for** voluntarism. We do not believe that Americans, acting either as citizens or as patients, require central direction from government in their choice of doctor or hospital, in the spending of their health care dollars, or in their selection of the health services and facilities best suited to their own individual needs.

"We take our stand for voluntary cooperation, for preservation of the historic federal-state organizational structure, for individual responsibility, for help for those persons who **need** help."

Dr. Larson emphasized that the AMA will continue to give primary attention to implementing the Kerr-Mills Act in the states, promoting voluntary health insurance and prepayment plans designed for the aged, and upgrading nursing homes.

The House of Delegates gave enthusiastic approval to Dr. Larson's address and took several actions reaffirming strong support for the Kerr-Mills program to aid the needy and near-needy aged, and urging a concerted, determined fight against Social Security health care proposals in Congress.

The House advised all state and county medical societies to recognize the impending threat and to prepare now for any eventuality by continuing to oppose any scheme which tries to impose a substandard system of medical care on the American people.

"United, as well as individual, effort is essential," the House declared. "To stop short of our total effort is to invite disaster and to let loose upon our beloved America irreversible forces which will ultimately destroy her. We cannot and we must not fail."

American College of Surgeons

The House agreed with the intent of five resolutions which expressed strong dissatisfaction over recent statements by a spokesman for the American College of Surgeons, and it also approved a Board of Trustees report informing the House that arrangements have been made for a January meeting with the ACS Board of Regents to discuss that organization's recent statements and policy positions. The report expressed hope that the meeting "will lead to a unification of effort in behalf of American Medicine."

The House instructed the Board of Trustees to take the five resolutions to the January meeting and to report to the delegates as soon as possible on the results of the meeting. In taking the action, the House approved a reference committee report which said:

"Your reference committee believes the public airing of disagreements between large segments of Medicine can only confuse and shake the confidence of the public in the medical profession and distort the true image of Medicine which the American people should have.

"However, in its hearings upon the several resolutions relating to the recent statements of the American College of Surgeons, all those who testified were in opposition to the actions and statements of the ACS. The majority of those who spoke were Fellows of the American College of Surgeons.

"Your reference committee has no wish to fan the flames of controversy ignited by the statements of the American College of Surgeons. On the other hand, the committee feels the House has an obligation to its membership—which includes physicians in all types of practice—to agree with the indignation manifested by the introduction of these resolutions and in

the discussions before the committee.

"This is all the more important because the position of the American College of Surgeons is based on an incorrect interpretation of the action of this House which in no sense is a retreat from its position of firm opposition to fee splitting."

American Medical Political Action Committee

The House heartily approved the purposes and goals of the recently organized American Medical Political Action Committee and urged all physicians, their wives and interested friends to join AMPAC and other political action committees in their states and communities.

"Effective political action must be carried on at the local level and effective implementation must be done by local groups of physicians," the House said. "The formation of AMPAC recognizes the need for a national medical political action committee to coordinate the political activities of physician groups at all levels throughout the country."

The purposes of AMPAC, which is an organization separate and distinct from the American Medical Association as required by federal law, are:

1. To promote and strive for the improvement of government by encouraging and stimulating physicians and others to take a more active and effective part in governmental affairs.

2. To encourage physicians and others to understand the nature and actions of their government as to important political issues and as to the records and positions of political parties, officeholders and candidates for elective office.

3. To assist physicians and others in organizing themselves for more effective political action and for carrying out their civic responsibilities.

4. To do any and all things necessary or desirable for the attainment of the purposes stated above.

Medical Discipline

The House received from the Council on Constitution and Bylaws a proposed amendment which would have made it possible to implement a recommendation by the Medical Disciplinary Committee that was approved by the House at the June, 1961, meeting. This recommendation was to change the bylaws so as to confer original jurisdiction on the Association to suspend and/or revoke the AMA membership of a physician found guilty of violating the Principles of Medical Ethics or the ethical policies of the Association, regardless of whether or not action has been taken against him at the local level. However, after considerable discussion on the floor of the House, the proposed amendment was referred back to the Council on Constitution and Bylaws.

In another action on medical discipline the House approved the expanded activities of the Judicial Council, which has taken over permanent responsibility in that area, and said that the Council program should benefit all physicians, the public and the profession.

Polio Vaccine

The House adopted a resolution which urged that medical societies at the local, county, district or state levels throughout the United States should encourage, stimulate and participate in surveys to determine the percentage of individuals in each community who have undergone immunizing procedures for poliomyelitis.

The resolution stated that on the basis of the results of the surveys, the local medical society should determine the type of vaccine and the most effective type of program which will be of greatest benefit to the public.

Until such time as all three types of oral vaccine are available, the resolution concluded, the Salk vaccine should be the vaccine of choice for routine poliomyelitis immunization, with the choice of program for administering the vaccine to be determined on a local basis by each county medical society.

Miscellaneous Action

In considering a wide variety of resolutions and annual and supplementary reports, the House also:

Dissapproved two proposals which would have required that **resolutions** be introduced 30 and 45 days, respectively, before Association meetings.

Approved a statement that physicians have an **ethical obligation** to participate in medical society activities and express their opinions fully and freely.

Reaffirmed AMA policy that it is not considered unethical for a physician to own or operate a **pharmacy** provided there is no exploitation of the patient.

Agreed with the Judicial Council that the physician himself is responsible for the control and custody of **drug samples** once they come into his possession, and in the high tradition of the medical profession he should not dispose of them in any way that could cause harm to others.

Commended those constituent medical societies which have moved forward in the area of **human relations** by eliminating membership restrictions based on race or color. In connection with the same subject, Dr. Peter Murray of New York City, retiring after 12 years of service in the House, told the delegates in a farewell address that Negro physicians now have some kind of medical society membership in every state except one.

Approved a recommendation that a special House committee be appointed to investigate all

facets of the operation of the **Joint Commission on Accreditation of Hospitals.**

Agreed with the Board's choice of Miami Beach, Florida, as the site for the **1964 Clinical Meeting.**

Approved the combining of the American Medical Education Foundation and the **American Medical Research Foundation into the American Medical Association Education and Research Foundation,** effective next January 1.

Deferred action on a proposed study of **fund raising** by voluntary health agencies, pending the development of additional information by the AMA Committee on Voluntary Health Agencies.

Reaffirmed the previous policy that physicians should have the privilege of prescribing drugs by either **generic or brand name.**

Approved the principle of **income tax deductions** for medical care of the aged.

Recommended, in reviewing the **Medicare Program,** that all county medical societies in the area surrounding armed forces hospitals make a serious attempt to establish formal liaison with the physicians on those hospital staffs.

Endorsed the administration of indigent medical care programs developed in cooperation with local medical organizations as a legitimate activity **of state and local health departments.**

Urged the elimination of all "categories" in programs of **assistance to the needy** at the federal and state level, with all assistance provided through a single program.

Referred to the Council on Medical Service a resolution proposing the use of state and federal tax funds to provide voluntary prepayment health insurance protection for the aged. In a related action the House approved experimentation with **prepayment plans** under assistance programs.

Urged more vigorous promotion of voluntary non-profit prepayment health plans.

Urged every physician in the United States to use automobile **seat belts.**

Recommended, as a civil defense measure, a **mass immunization** program for the general public.

Suggested that the Board of Trustees continue its negotiations to develop a group **disability insurance** program for AMA members.

Concurred in the Board's appointment of a special committee to study the organizational status of **AMA Sections,** the functions of the Scientific Assembly and existing procedures for establishing medical certifying boards.

Instructed the Council on Medical Education and Hospitals to study the present and potential contribution of the **American Board of Abdominal Surgery** to the advancement of the art and science of surgery and the betterment of public health, to determine whether it should be approved as a recognized examining board.

Approved and commended the objectives and program submitted by the Committee for Liaison with **National Nursing Organizations.**

Recommended that the Secretary of Defense consider the advisability of developing a training program for **reserve medical officers.**

Awards and Donations

The AMA Board of Trustees presented a special citation to the producers and cast of The Donna Reed Show for its "contribution to public understanding of the high ideals of the medical profession." Carl Betz, who portrays Dr. Alex Stone on the television show, received the award from Dr. Hugh H. Hussey, Jr., AMA Board chairman, at the Wednesday Session of the House.

Contributions totaling $435,275.93 from physicians in six states were presented to the American Medical Education Foundation during the opening session on Monday.

Registration

Final registration at the meeting reached a total of 6,138, including 2,976 physicians.

WOMEN SERVE THE PUBLIC

In the four decades since women won the right to vote they have assumed important positions in business, finance, government—virtually every occupation once considered "for men only."

Nowhere is this more evident than in public service:

17 women are in the United States Congress
347 women sit in state legislatures, including
- 55 in New Hampshire
- 49 in Connecticut
- 48 in Vermont
- 12 each in Arizona and Pennsylvania
- Only 4 states have no women in their legislatures

In 1958 there was a 37 percent increase in the number of statewide elective positions women held.

In 1959, over 20,000 women served as county clerks, superintendents of schools, tax collectors, auditors and treasurers.

10,000 women serve on city councils or hold comparable jobs.

Does this not give you, as members of the State Society, an incentive to encourage more of our auxiliary members to enter politics? It would be materially helpful to our cause if more of our doctors and their wives would become members of our state legislature, where they would be in a position to fight and vote against all bills detrimental to organized medicine and render a great service to our profession, our patients and the public in general.

We need such support at this time in our efforts to prevent the socialized medicine "good

wishers" and the cultists from controling the practice of medicine.

1962 DUES

Although a letter concerning payment of 1962 dues was sent to all members of the State Society the early part of November, dues have not yet been received from many members.

As stated in the communication from the Secretary-Treasurer of the State Society, according to the By-Laws these dues must be paid in advance and should be received prior to January 1, 1962. Medical defense is not in effect for any member who has not paid annual State Society dues prior to the rendering of service for which damages are claimed and it is therefore important that dues be paid in advance in order to assure continuous protection through the entire year of 1962.

Amount of dues for 1962 State Society membership is $50.00 and for AMA membership $35.00. Since dues can not be accepted direct by the State Society, separate checks for these dues should be submitted to the parish or district society of which a doctor is a member, along with his dues for membership in the local society.

As stated above, continuous membership is important and in addition to medical defense protection, it is most desirable to have no interruption in receipt of the State Society Journal and publications received through AMA membership.

Each member who has not already paid dues for next year is urged to do this immediately.

MEDICARE INFORMATION

Of course, our Society no longer has a contract with Dependent's Medical Care Department of the U. S. Government and does not participate in this program as a Society.

However, it is our understanding that some individual physicians do treat these cases and have been paid for their services on the basis of a published schedule fee booklet designating maximum fees which the Fiscal Agent can pay for these respective services.

According to late information "This Medicare Manual and Schedule of Allowances" containing authorized fees will no longer be published and made available to physicians in Louisiana.

It is recognized that Medicare fees have always been published and distributed to practicing physicians in Louisiana. Non-distribution of schedule of fees should not pose a continuing problem, however, since under Medicare, physicians are expected to bill their usual charges for like services furnished to individuals with annual incomes of $4500.00 and this procedure should be continued since it remains as a contract provision.

MEDICAL NEWS SECTION

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Ascension	Third Tuesday of every month	
Calcasieu	Fourth Tuesday every other month	Lake Charles
East Baton Rouge	Second Tuesday of every month	Baton Rouge
Jefferson	Third Thursday of every month	
Lafayette	Second Tuesday of every month	Lafayette
Morehouse	Third Tuesday of every month	Bastrop
Natchitoches	Second Tuesday of every month	
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Tangipahoa	Second and fourth Thursdays of every month	Independence
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

DR. SEGALOFF NAMED DIRECTOR OF RESEARCH

Dr. Albert Segaloff has been named Director of Research at Alton Ochsner Medical Foundation, effective October 1. In addition to this newly created administrative position, Dr. Segaloff will continue as Director of the Foundation's Division of Endocrine Research, which post he has held since 1945.

Dr. Segaloff also serves as head of the Department of Endocrinology, Ochsner Clinic and Ochsner Foundation Hospital. He is Associate Professor of Clinical Medicine at Tulane University School of Medicine, and a Fellow of the

American College of Physicians. He was the recipient of the 1951 Ciba Award of the Endocrine Society, and has authored numerous publications.

Dr. Segaloff currently serves as consultant in cancer chemotherapy to the National Cancer Institute, Bethesda, Md., is a member of the Endocrine Panel, and is chairman of the Hormone Evaluation Committee and the Cooperative Breast Cancer Group of the Cancer Chemotherapy National Service Center.

One of the Ochsner Foundation's major research projects is a continuing intensive study of hormone and chemotherapeutic agents in neoplasia. This work, under Dr. Segaloff's direction, is supported by grants from the American Cancer Society and the National Institutes of Health.

SYMPOSIUM ON INFERTILITY

New York University Medical Center in conjunction with the American Society for the study of sterility will present a symposium on infertility on February 8-9-10, 1962. This symposium is planned for urologists, gynecologists, endocrinologists, internists, and others who are interested in the problems of infertility. Approximately one-third of the program will be devoted to the problems in the male, one-third to the female, and one-third to the couple. The material will be presented in the form of lectures, panels, and demonstrations.

The symposium will be staffed predominantly by a guest faculty of outstanding clinicians and researchers in the three areas to be covered.

The tuition will be $75.00. A detailed program and application may be obtained from the office of the Associate Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, New York.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The Part I Examinations (Written) of this Board will be held in various cities of the United States, Canada, and military centers outside the Continental United States on Friday, January 5, 1962.

Applicants and candidates for examination in 1963, please note that the deadline date for making application is advanced to July, 1962.

Current Bulletins outlining present requirements may be obtained by writing to the Executive Secretary's office.

PHARMACEUTICAL MANUFACTURERS ASSOCIATION

Following is the text of a letter of September 29 from Austin Smith, M. D., President of the Pharmaceutical Manufacturers Association, to General Alfred M. Gruenther, President, American National Red Cross, and The Honorable Frank B. Ellis, Director, Office of Civil and Defense Mobilization:

"The Pharmaceutical Manufacturers Association was established in Washington in 1958 to serve the interests of its Members Firms who produce prescription pharmaceuticals and to serve on their behalf the interests of the public.

"In the latter capacity we have taken an increasing interest in collecting and distributing information regarding the role of our industry in disaster situations. As you know, a frequent result of an accidental or natural disaster is damage to or destruction of medical supplies while, at the same time, demands for such supplies are increased.

"With this in mind, our staff has made a survey of the response of our Member Firms in the area affected by Hurricane Carla. The policy of our industry in this type of situation emerges quite clearly as a result. It occurred to me that it would be helpful to you and your associates to have this information now and for the future.

"Nearly 40 firms who responded to our request for information and who account for most of the prescription drug production in the United States have undertaken to replace without charge damaged and destroyed pharmacy stocks in the hurricane area. Most of these firms have stated that such replacements apply to those stocks which are uninsured. The method of carrying out these activities varies somewhat according to the resources and personnel of each firm. Those who maintain or are able to furnish field representatives in the storm area instruct these men to make personal observations and to arrange for stock replacements. Others accept claims at their home offices and administer them accordingly.

"The basis for this policy is, of course, that physicians must have available to them a guaranteed supply of vital therapeutic tools without the loss of time involved in recovery by individual pharmacists of resources sufficient to resupply themselves through normal commercial channels.

"I am sure that this policy remains in force in any pertinent disaster situation and I hope that it has been of meritorious effect in coping with problems created by the recent hurricane."

THE DR. M. T. VAN STUDDIFORD MEMORIAL NURSING LOAN FUND OF LOUISIANA STATE UNIVERSITY MEDICAL SCHOOL

A fund has been established in memory of the late Dr. M. T. Van Studdiford for the purpose of loans to young women who desire to enter L.S.U. from the State of Louisiana for a four year nursing course leading to a B.S. degree or for graduate nurses of Louisiana with an R.N., to acquire the B.S. degree, to enable them to teach or to become hospital supervisors.

Donations to this Fund (tax exempt) may be

sent to: Sister Henrietta Guyot, Director of Nursing, Louisiana State University School of Nursing, LSU School of Medicine, 1542 Tulane Avenue, New Orleans 12, La. Checks should be made out to: Dr. M. T. Van Studdiford Nursing Loan Fund of Louisiana State University.

BOOK REVIEWS

The Physician and the Law; by Roland H. Long, ed. 2. New York, Appleton, 1959. 302 p. $5.95.

The tone of this book is well characterized by Dr. Milton Helpern, Medical Examiner of the City of New York in the Foreword:

> "However, the legal responsibilities and medicolegal situations arising out of the practice of medicine in our increasingly complex society create many legal hazards against which the physician should be constantly on guard. Yet all too frequently, he is unaware of these hazards, or misinformed about them, in his professional relationships with patients and with governmental agencies."

The book though brief gives a very excellent coverage of the medicolegal ramifications of the practice of medicine and well might serve as a text for a course in Medicolegal medicine. Of necessity, the subject matter is handled in a general manner and specific references to the law of the state in which the book is to be used must be amplified.

R. J. MUELLING, JR., M. D.

Practical Clinical Management of Electrolyte Disorders; by William J. Grace, Appleton-Century-Crofts, 1960, 132 p. $4.95.

This is a small book, the purpose of which is to give a practical guide to the clinical management of patients with fluid and electrolyte problems. It does not attempt to go into the basic physiological mechanisms of normal regulation or their disturbance during disease. Its ten chapters are arranged for the most part in terms of clinical syndromes, such as heart failure and severe vomiting, and each chapter contains one or two case reports presented in some detail, with a discussion of the problems presented and the treatment given. It follows that the amount of space devoted to formal textual instruction is not very large, but there are three chapters discussing acid base imbalance, magnesium deficiency, and potassium depletion.

This book must, obviously, stand or fall by the standard of its advice for practical clinical management of patients. This is reasonably sound, though oversimplified. The chapter on replacement of electrolyte deficits by formulas uses rules which are fallacious, such as calculating sodium deficit on the decrease in serum level and the volume of extracellular fluid, rather than total body water, thus ignoring internal fluid shifts.

The reviewer does not feel that the book is a useful addition to existing works.

BRIAN H. MCCRACKEN, M. D.

W. B. SAUNDERS COMPANY features the following recent books in their full page advertisement appearing elsewhere in this issue:

GRAHAM, SOTTO and PALOUCEK—CANCER of the CERVIX
full and authoritative coverage of the diagnosis and management of cervical cancer —from Roswell Park Memorial Institute.

HOGAN and ZIMMERMAN—OPHTHALMIC PATHOLOGY
an atlas and textbook on diagnosis of diseases of the eye and on the pathology of involved tissue.

OWEN—HOSPITAL ADMINISTRATION
covers every aspect in the construction, organization and administration of today's hospitals.

PUBLICATIONS RECEIVED

(Certain ones of these will be selected for review)

Appleton-Century-Crofts, Inc., N. Y.: Immunity, by Sidney Raffel, M. D. (2nd edit.).

The Bobbs-Merrill Co., Inc., N. Y.: Executives' Health Secrets; How to Lick Tensions and Pressures, by William P. Shepard, M. D.

C. V. Mosby Co., St. Louis: Differentiation Between Normal and Abnormal in Electrocardiography, by Ernst Simonson, M. D.

Philosophical Library, Inc., N. Y.: The Art of Thinking, by Dagobert D. Runes.

W. B. Saunders Co., Phila.: Clinical Obstetrics, by Benjamin Tenney, M. D., and Brian Little, M. D.; Disturbances of Heart Rate, Rhythm and Conduction, by Eliot Corday, M. D., and David W. Irving, M. D.; Psychiatry: Biological and Social, by Ian Gregory, M. D.

Charles C Thomas, Publisher, Springfield, Ill: A Simplified Physiology of the Human Body, by Deryck Taverner, M. D.

The Williams & Wilkins Co., Balt.: Medicine in Tropical Africa, A Realistic Approach, by Michael Gelfand, M. D.

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